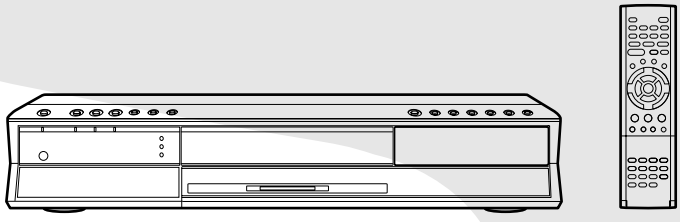
TOSHIBA

FILE NO. 810-200423

SERVICE MANUAL

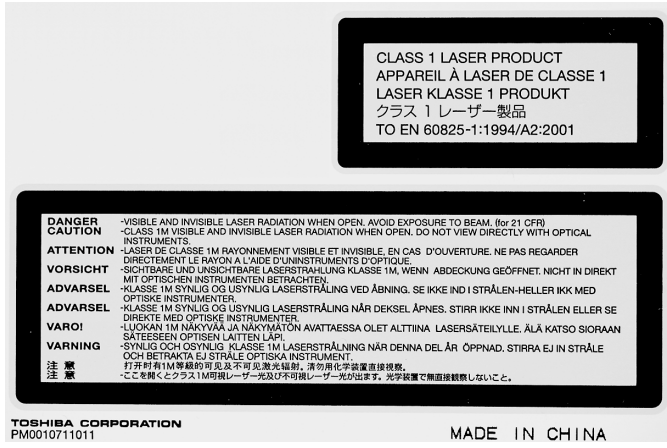
HDD/DVD VIDEO RECORDER

RD-XS32SB
RD-XS32SF
RD-XS32SG



May, 2004 Ⓢ

LASER BEAM CAUTION LABEL


CLASS 1 LASER PRODUCT
APPAREIL À LASER DE CLASSE 1
LASER KLASSE 1 PRODUKT
クラス 1 レーザー製品
TO EN 60825-1:1994/A2:2001
DANGER
CAUTION
-VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. (for 21 CFR)
-CLASS 1M VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.
ATTENTION
-LASER DE CLASSE 1M RAYONNEMENT VISIBLE ET INVISIBLE, EN CAS D'OUVERTURE. NE PAS REGARDER DIRECTEMENT LE RAYON A L'AIDE D'UNINSTRUMENTS D'OPTIQUE.
VORSICHT
-SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG KLASSE 1M, WENN ABDECKUNG GEÖFFNET. NICHT IN DIREKT MIT OPTISCHEN INSTRUMENTEN BETRACHTEN.
ADVARSEL
-KLASSE 1M SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. SE IKKE IND I STRÅLEN-HELLER IKK MED OPTISKE INSTRUMENTER.
ADVARSEL
-KLASSE 1M SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. STIRR IKKE INN I STRÅLEN ELLER SE DIREKTE MED OPTISKE INSTRUMENTER.
VARO!
-LUOKAN 1M NÄKYVÄÄ JA NÄKYMÄTÖN AVATTAESSA OLET ALTTIINA LASERSÄTEILYLLE. ÄLÄ KATSO SIORAAN SÄTEESEEN OPTISEN LAITTEN LÄPI.
VARNING
-SYNLIG OCH OSYNLIG KLASSE 1M LASERSTRÅLNING NÄR DENNA DEL ÅR ÖPPNAD. STIRRA EJ IN STRÅLE OCH BETRAKTA EJ STRÅLE OPTISKA INSTRUMENT.
注 意
打开时有1M等級的可见及不可见激光辐射。请勿用化学装置直接视察。
注 意
-ここを開くとクラス1M可視レーザー光及び不可視レーザー光が出ます。光学装置で無直接観察しないこと。
TOSHIBA CORPORATION
PM0010711011
MADE IN CHINA

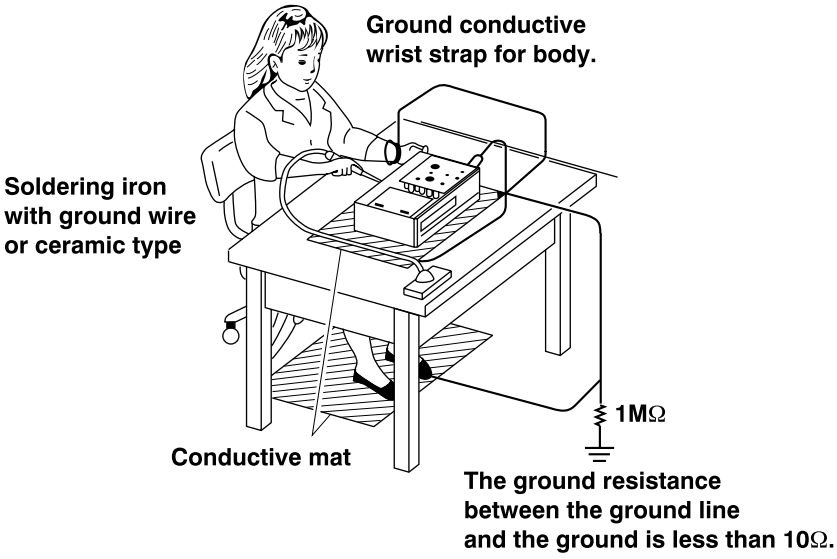
When the power supply is being turned on, you may not remove this laser cautions label. If it removes, radiation of a laser may be received.

PREPARATION OF SERVICING

Pickup Head consists of a laser diode that is very susceptible to external static electricity.

Although it operates properly after replacement, if it was subject to electrostatic discharge during replacement, its life might be shortened. When replacing, use a conductive mat, soldering iron with ground wire, etc. to protect the laser diode from damage by static electricity.

And also, the LSI and IC are same as above.



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SAFETY PRECAUTION
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ABBREVIATIONS
   - 1. Integrated Circuit (IC)
   - 2. Capacitor (Cap)
   - 3. Resistor (Res)
4. EXPLODED VIEWS
   - 4-1. Packing Assembly
   - 4-2. Chassis Assembly
5. PARTS LIST

SECTION 1
GENERAL DESCRIPTIONS

1. OPERATING INSTRUCTIONS

Please refer to the owner's manual about the contents.

2. LOCATION OF MAIN PARTS

2-1. Location of Main Parts

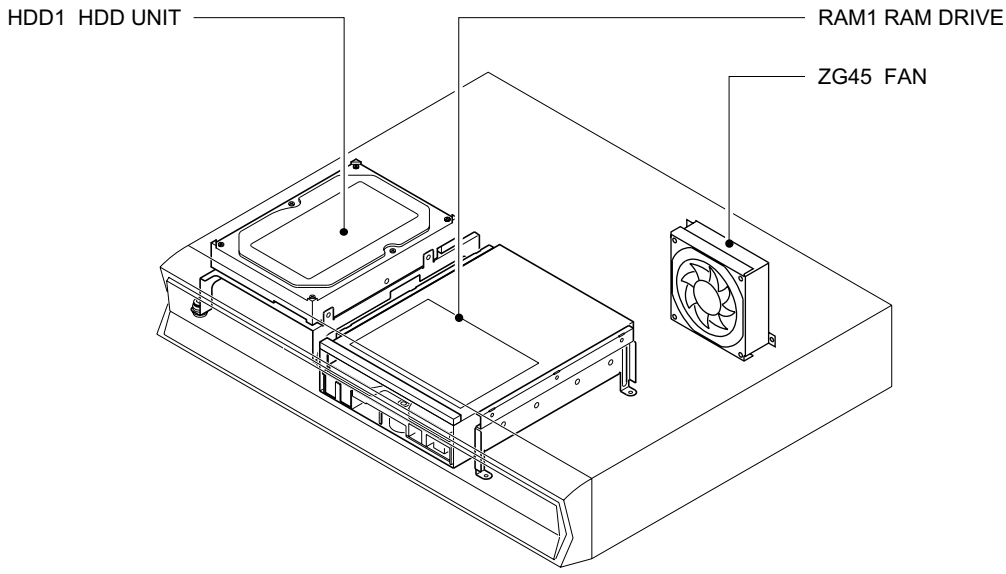


Fig. 1-2-1

2-2. Location of PC Boards

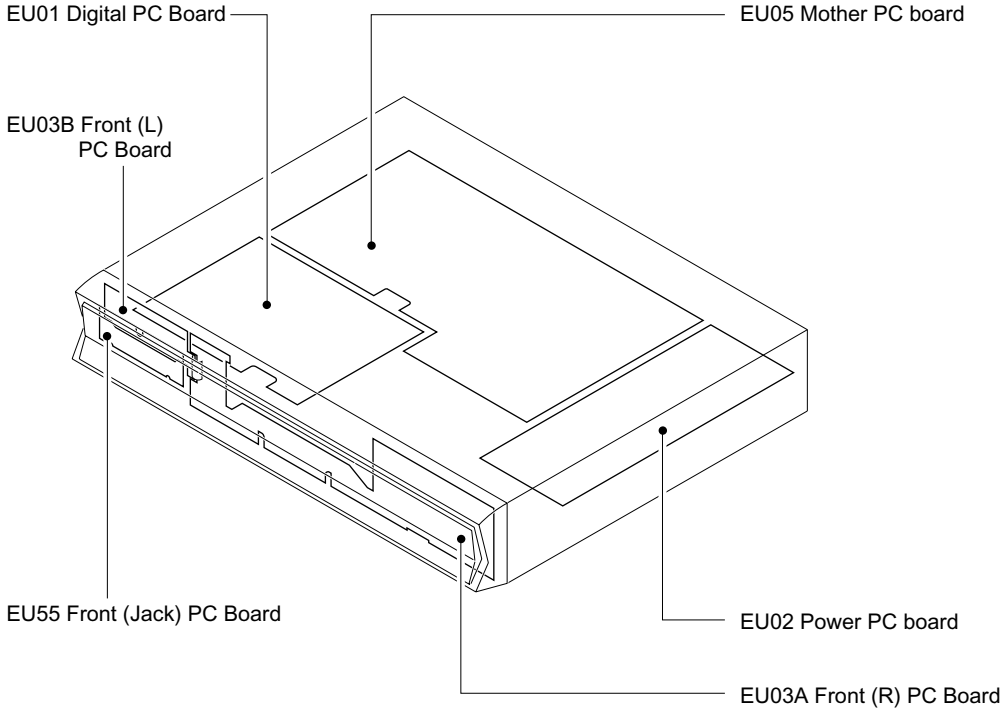


Fig. 1-2-2

SECTION 2
PART REPLACEMENT AND ADJUSTMENT PROCEDURES

CAUTIONS BEFORE STARTING PART REPLACEMENT

Electronic parts are susceptible to static electricity and may easily damaged, so do not forget to ground as required. Many screws are used inside the unit. To prevent the screws from missing or dropping, etc. always use a magnetized screwdriver in servicing. Several kinds of screws are used and some of them need special cautions. That is, take care of the tapping screws securing molded parts and fine pitch screws used to secure metal parts. If they are used improperly, the screw holes will be easily damaged and the parts can not be fixed.

1. REPLACEMENT OF MECHANICAL PARTS

1-1. Cabinet Replacement

1-1-1. Top Cover

1. Remove seven screws (1), then remove the top cover (2).

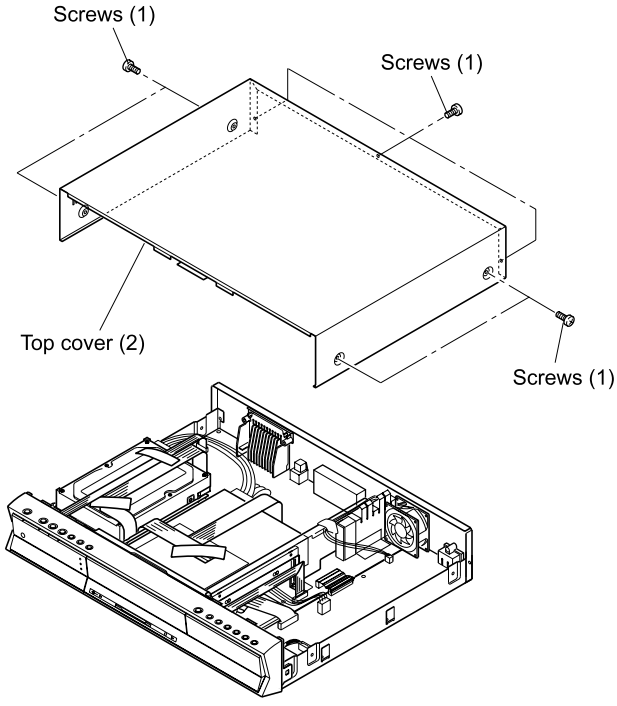


Fig. 2-1-1

1-1-2. HDD

1. Peel off two tapes (1).
2. Disconnect the flexible cable (2).
3. Disconnect the connector (3).
4. Remove two screws (4) and two screws (5), then remove the HDD (6).

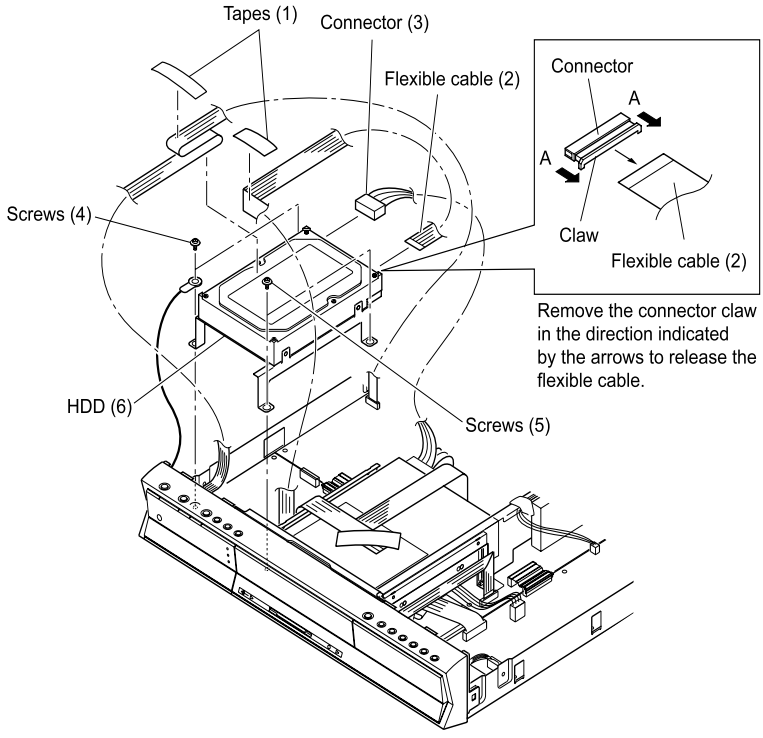


Fig. 2-1-2

1-1-3. Front Panel

1. Remove the top cover. (Refer to item 1-1-1.)
2. Remove the HDD. (Refer to item 1-1-2.)
3. Disconnect the flexible cable (1).
4. Disconnect the flexible cadle (2) and two connectors (3).
5. Remove two screws (4).
6. Release four claws, then remove the front panel (5).

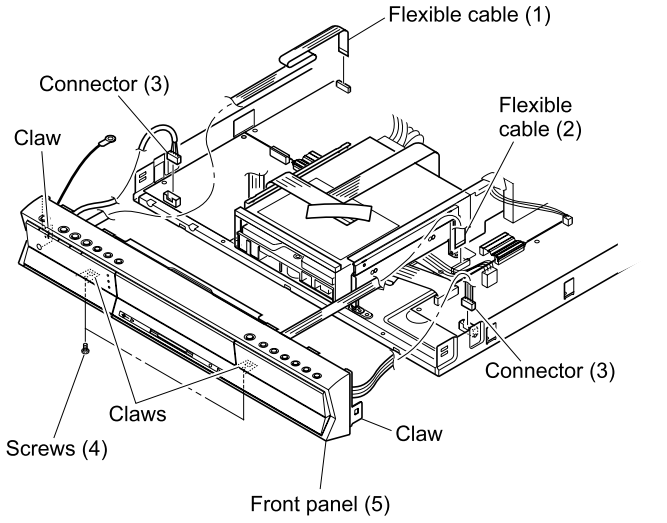


Fig. 2-1-3

1-1-4. Tray Door

1. Remove the front (R) PC board and front (L) PC board. (Refer to item 1-2-4.)
2. Remove a spring (1).
3. Remove the tray door (2) while slightly bending it.

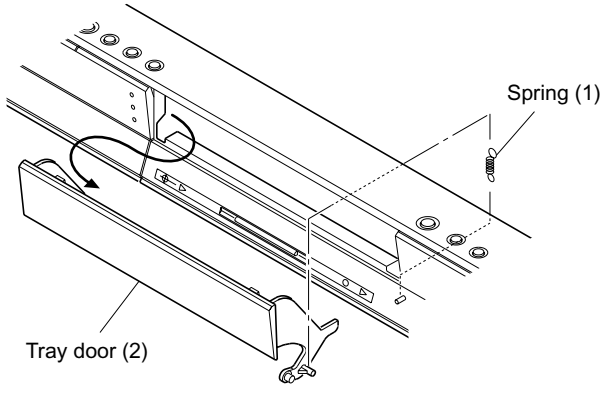


Fig. 2-1-4

1-1-5. Operation Panel Door

1. Open the operation panel door (1).
2. Release two claws and unhinge the door (1).

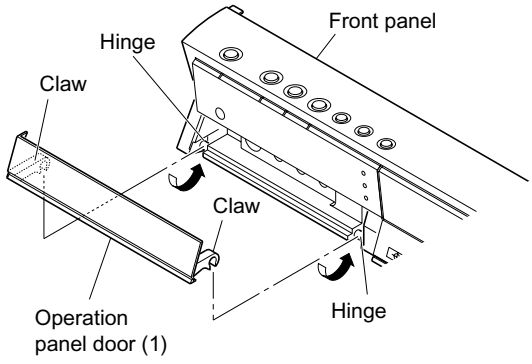


Fig. 2-1-5

1-1-6. RAM Drive

1. Remove the HDD. (Refer to item 1-1-2.)
2. Peel off the tape (1).
3. Disconnect the flexible cables (2).
4. Disconnect the connector (3).
5. Remove two screws (4) and acrylic board (5).
6. Remove four screws (6), then remove the RAM drive (7).

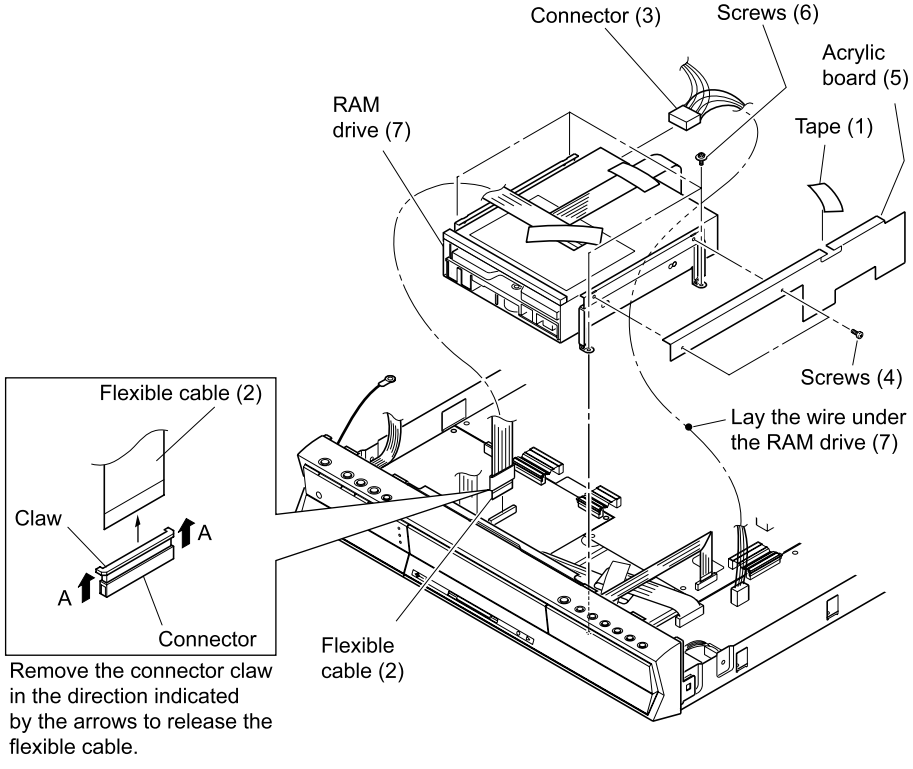


Fig. 2-1-6

1-1-7. Fan

1. Peel off the tape (1).
2. Disconnnect the connector (2).
3. Remove four screws (3) and the fan (4).

Note:

- After replacing the fan (4), attatch the tape (1) as it was.

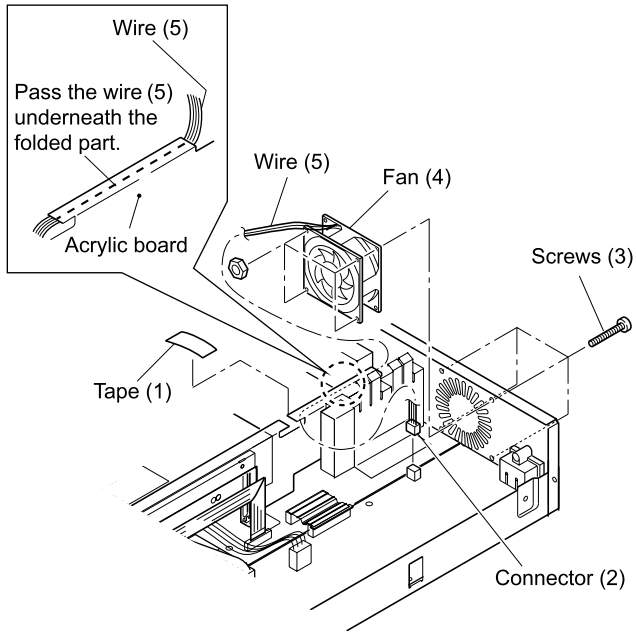


Fig. 2-1-7

1-1-8. Rear Panel

1. Remove twelve screws (1), then remove the rear panel (2).

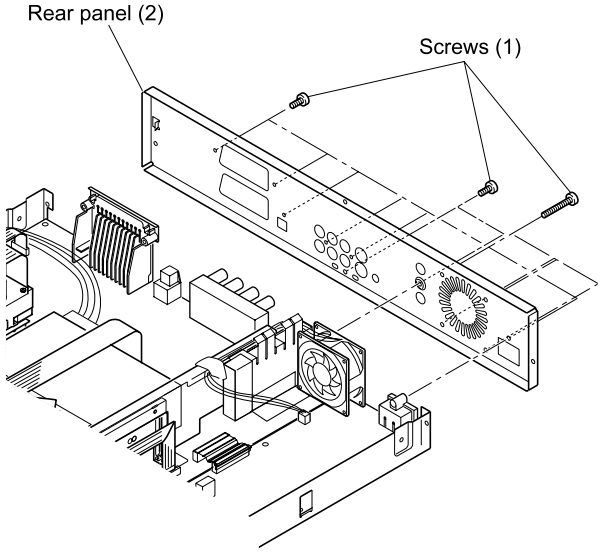


Fig. 2-1-8

1-2. PC Board Replacement

1-2-1. Digital PC Board

1. Remove the HDD. (Refer to item 1-1-2.)
2. Remove the RAM drive. (Refer to item 1-1-6.)
3. Disconnect two connectors (1).
4. Peel off the tape (2), then disconnect two connectors (3).
5. Disconnect two flexible cables (4).
6. Remove three screws (5) and the digital PC board (6).

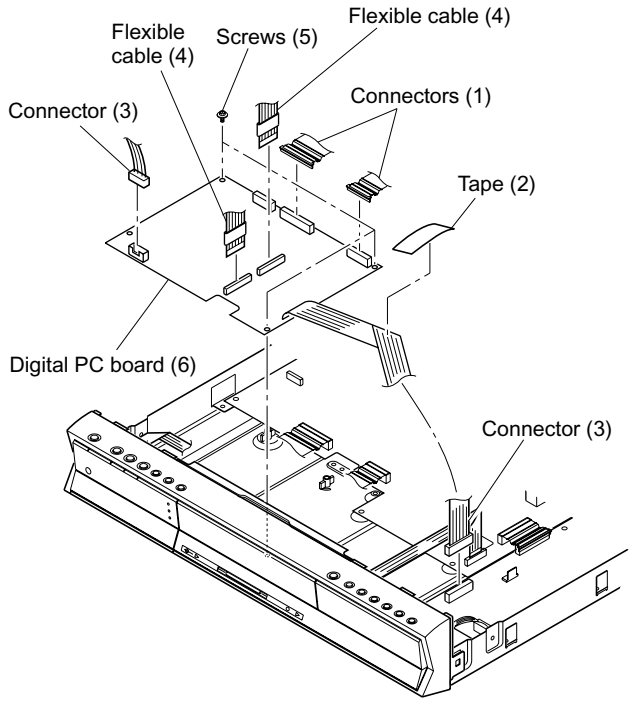


Fig. 2-1-9

1-2-2. Mother PC Board

1. Remove the HDD. (Refer to item 1-1-2.)
2. Remove the RAM drive. (Refer to item 1-1-6.)
3. Remove the rear panel. (Refer to item 1-1-8.)
4. Disconnect three connectors (1).
4. Disconnect the flexible cable (2).
5. Remove three screws (3), then remove the mother PC board (4).

Note:

- When mounting the tuner, confirm that the insulation tape (cotton) is attached under the copper foil.

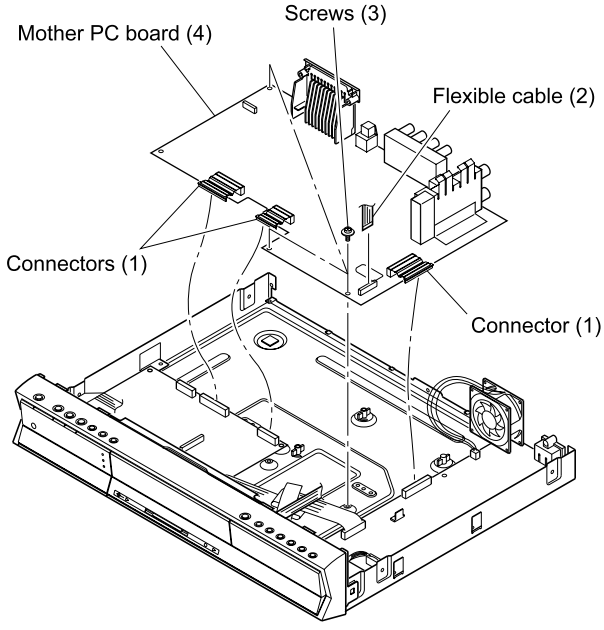


Fig. 2-1-10

1-2-3. Power PC Board

Cautions :

- **Danger of explosion if battery is incorrectly replaced.**
- **Replace only with the same or equivalent type.**

1. Disconnect three connectors (1).
2. Disconnect the connector (2).
3. Remove the screw (3), four screws (4) and the power PC board (5).

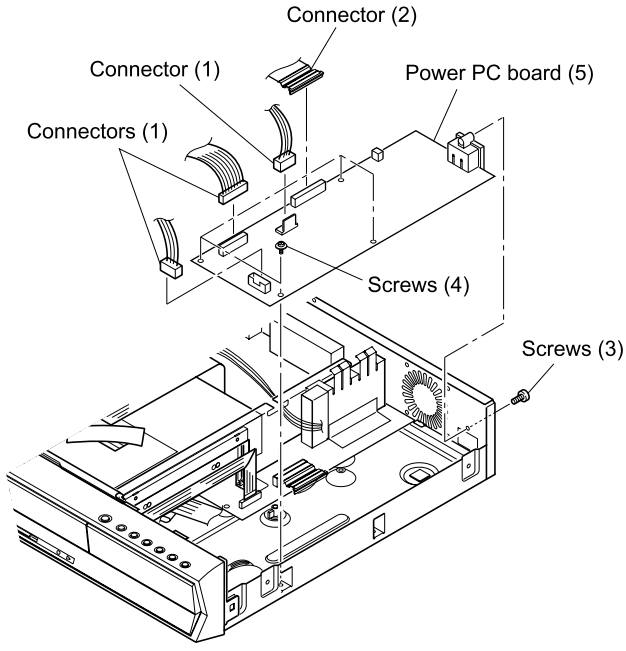


Fig. 2-1-11

1-2-4. Front (R), Front (L), Front (Jack) PC Board

1. Remove the front panel. (Refer to item 1-1-3.)
2. Remove six screws (1), then remove the stay (2).
3. Remove five screws (3) and the screw (4), then remove the front (R) PC board (5) and front (L) PC board (6).
4. Remove four screws (7), then remove the front (Jack) PC board (8).

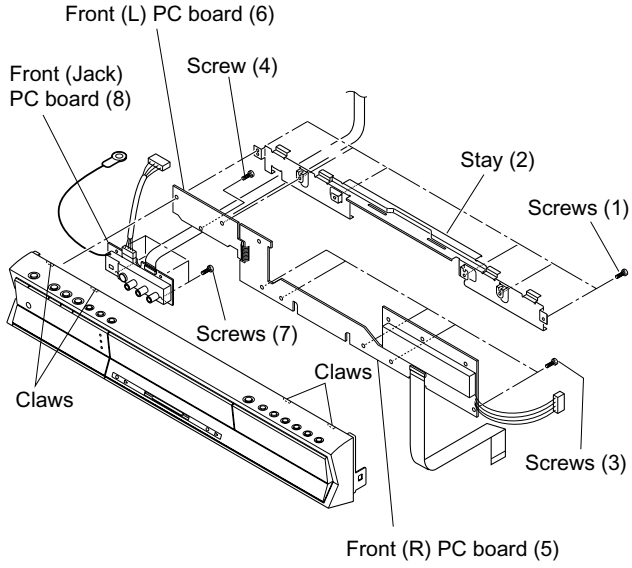


Fig. 2-1-12

SECTION 3
SERVICING DIAGRAMS

1. CIRCUIT SYMBOLS AND SUPPLEMENTARY EXPLANATION

1-1. Precautions for Part Replacement

- In the schematic diagram, parts marked ⚠ (ex. ⚠ F801) are critical part to meet the safety regulations, so always use the parts bearing specified part codes (SN) when replacing them.
- Using the parts other than those specified shall violate the regulations, and may cause troubles such as operation failures, fire etc.

1-2. Solid Resistor Indication

Unit	None ..... Ω K ..... kΩ M ..... MΩ
Tolerance	None ..... ±5% B ..... ±0.1% C ..... ±0.25% D ..... ±0.5% F ..... ±1% G ..... ±2% K ..... ±10% M ..... ±20%
Rated Wattage	(1) Chip Parts None ..... 1/16W (2) Other Parts None ..... 1/6W Other than above, described in the Circuit Diagram.
Type	None ..... Carbon film S ..... Solid R ..... Oxide metal film M ..... Metal film W ..... Cement FR ..... Fusible

Eg. 1

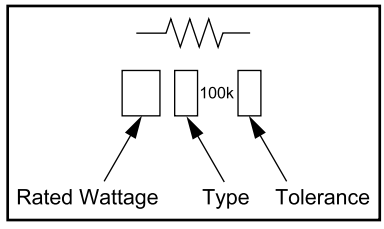


Fig. 3-1-1

1-3. Capacitance Indication

Symbol	..... Electrolytic, Special electrolytic NP ..... Non polarity electrolytic ..... Ceramic, plastic M ..... Film ..... Trimmer
Unit	None ..... F μ ..... μF p ..... pF
Rated voltage	None ..... 50V For other than 50V and electrolytic capacitors, described in the Circuit Diagram.
Tolerance	(1) Ceramic, plastic, and film capacitors of which capacitance are more than 10 pF. None ..... ±5% or more B ..... ±0.1% C ..... ±0.25% D ..... ±0.5% F ..... ±1% G ..... ±2% (2) Ceramic, plastic, and film capacitors of which capacitance are 10 pF or less. None ..... more than ±5 pF B ..... ±0.1 pF C ..... ±0.25 pF (3) Electrolytic, Trimmer Tolerance is not described.
Temperature characteristic (Ceramic capacitor)	None ..... SL For others, temperature characteristics are described. (For capacitors of 0.01 μF and no indications are described as F.)
Static electricity capacity (Ceramic capacitor)	Sometimes described with abbreviated letters as shown in Eg. 3.

Eg. 2

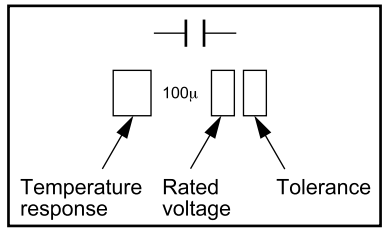


Fig. 3-1-2

Eg. 3

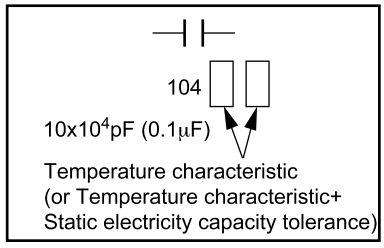


Fig. 3-1-3

1-4. Inductor Indication

Unit	None ..... H μ ..... μH m ..... mH
Tolerance	None .....±5% B .....±0.1% C .....±0.25% D .....±0.5% F .....±1% G .....±2% K .....±10% M .....±20%

Eg. 4

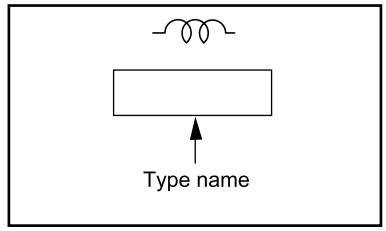


Fig. 3-1-4

1-5. Waveform and Voltage Measurement

- The waveforms for CD/DVD and RF shown in the circuit diagrams are obtained when a test disc is played back.
- All voltage values except the waveforms are expressed in DC and measured by a digital voltmeter.

Eg. 5

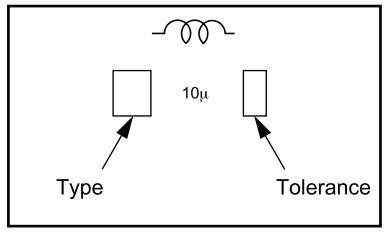
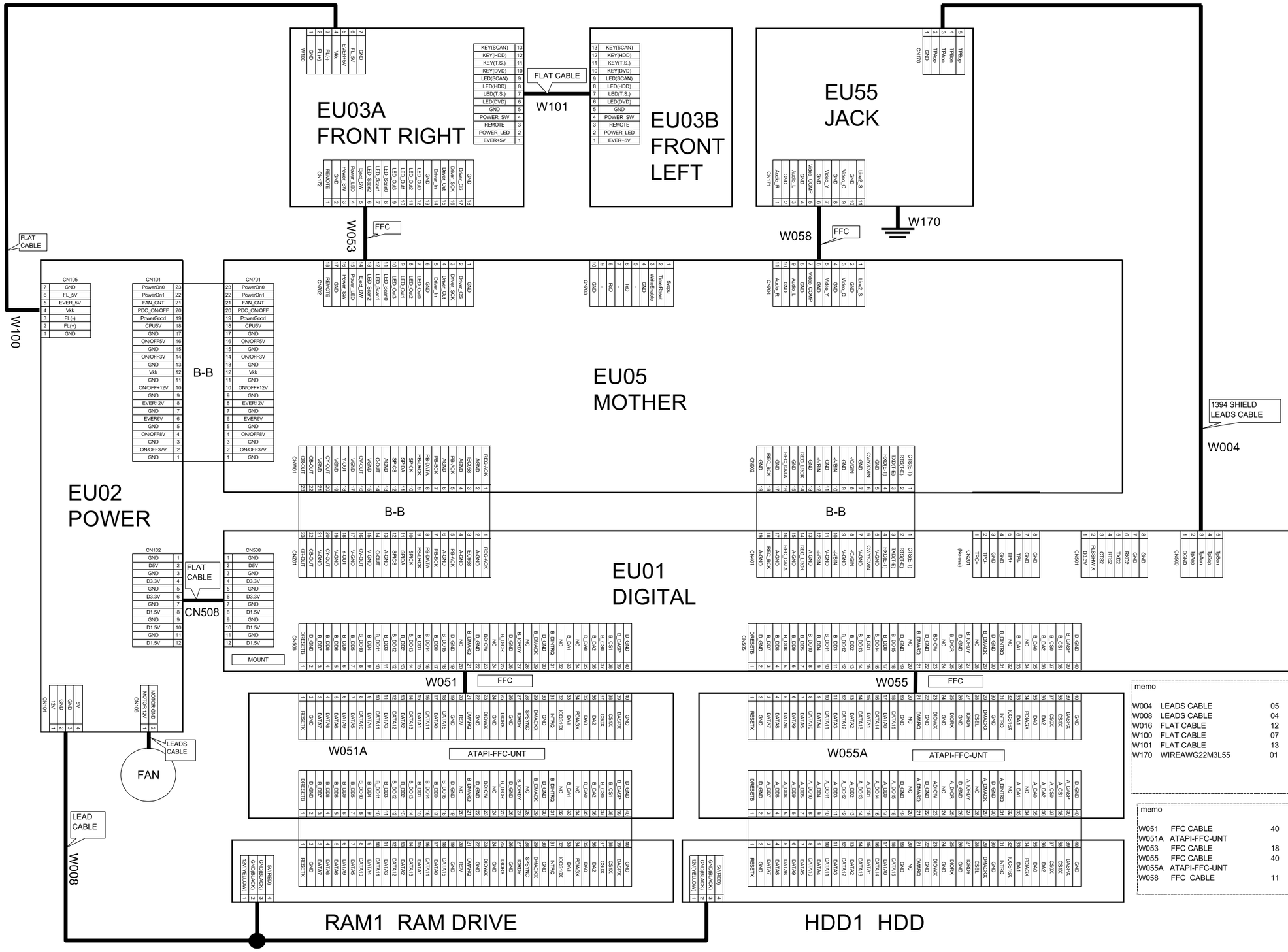


Fig. 3-1-5

1-6. Others

- The parts indicated with "NC" or "KETU" etc. are not used in the circuits of this model.

2. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM



memo			
W004	LEADS CABLE	05	120
W008	LEADS CABLE	04	250
W016	FLAT CABLE	12	215
W100	FLAT CABLE	07	140
W101	FLAT CABLE	13	30
W170	WIREAWG22M3L55	01	55

memo			
W051	FFC CABLE	40	360
W051A	ATAPI-FFC-UNT		
W053	FFC CABLE	18	200
W055	FFC CABLE	40	240
W055A	ATAPI-FFC-UNT		
W058	FFC CABLE	11	330

Fig. 3-2-1

3. BLOCK DIAGRAMS

3-1. Overall Block Diagram

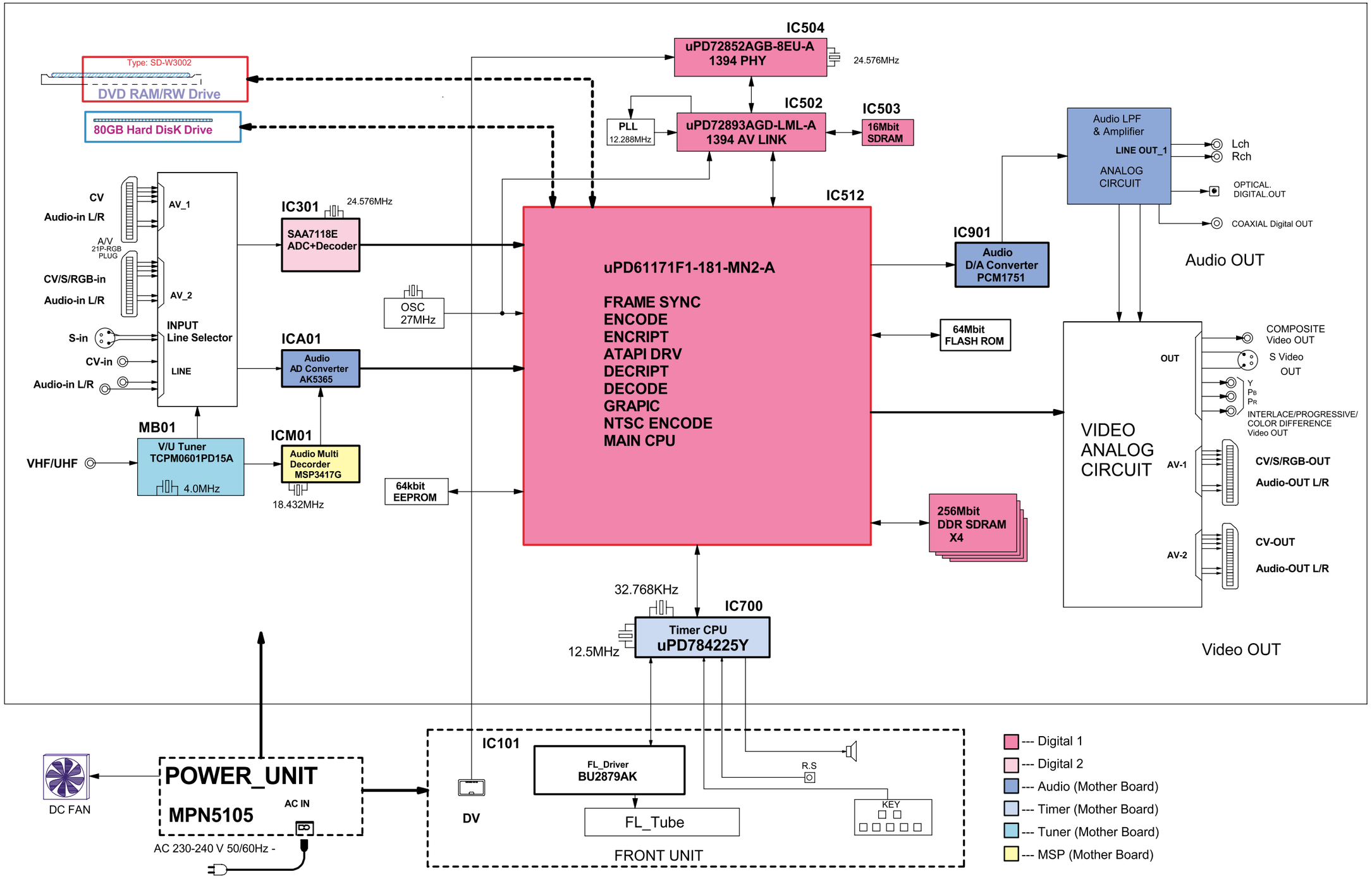


Fig. 3-3-1

4. CIRCUIT DIAGRAMS

4-1. Power Supply Circuit Diagram

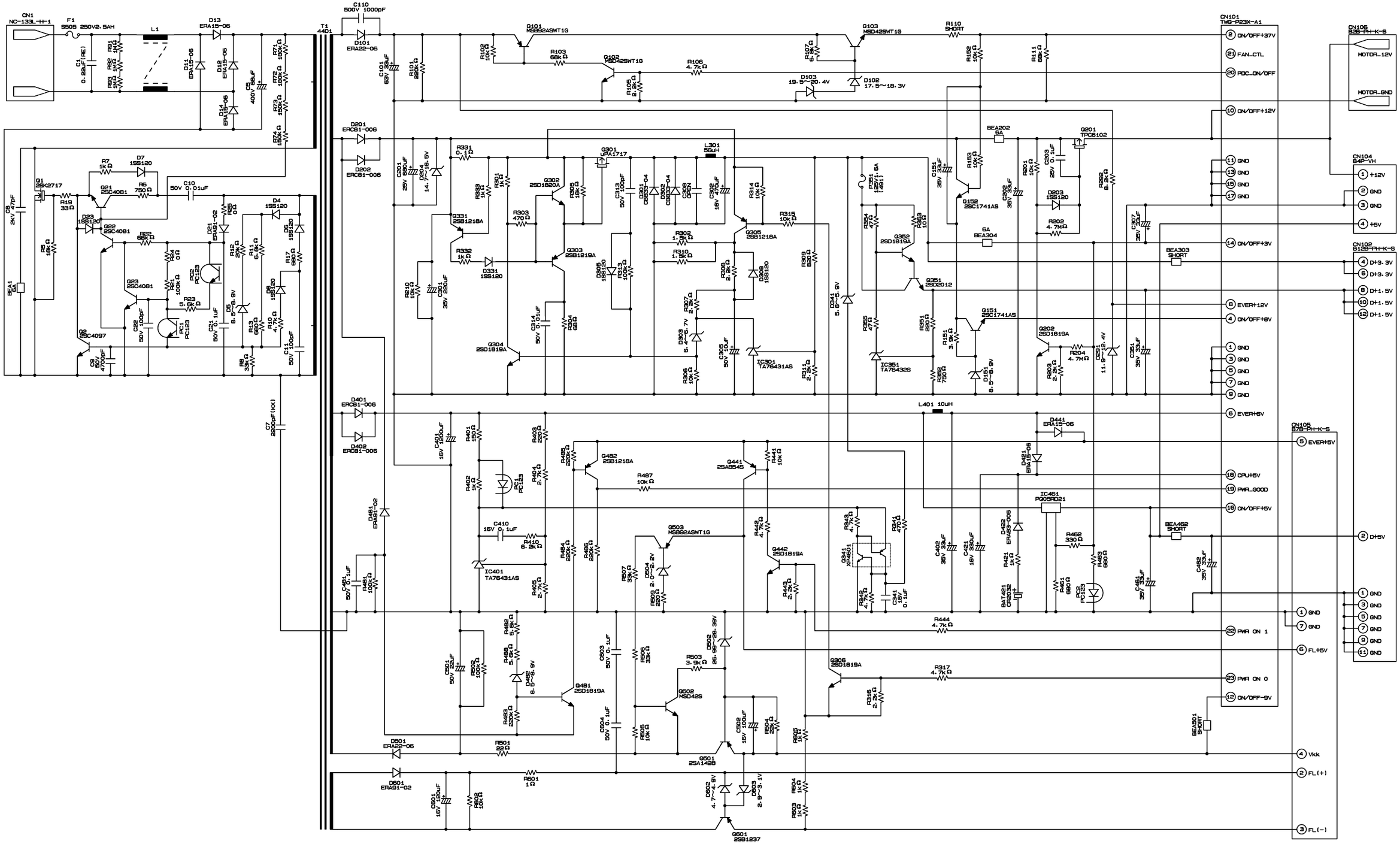


Fig. 3-4-1

4-2. Front Circuit Diagram

4-2-1. Front Jack Circuit Diagram

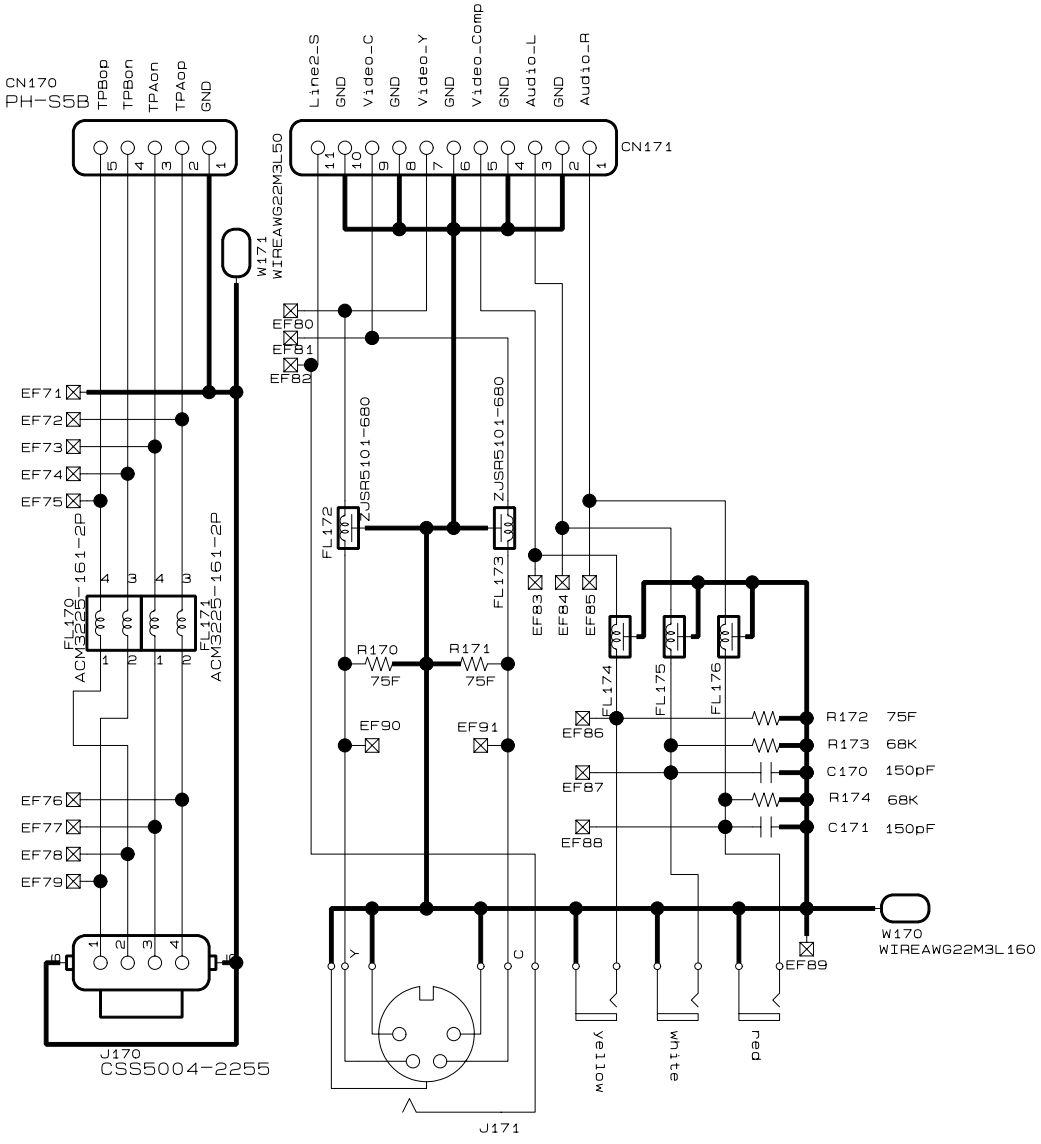


Fig. 3-4-2

4-2-2. Front Circuit Diagram (L/R)

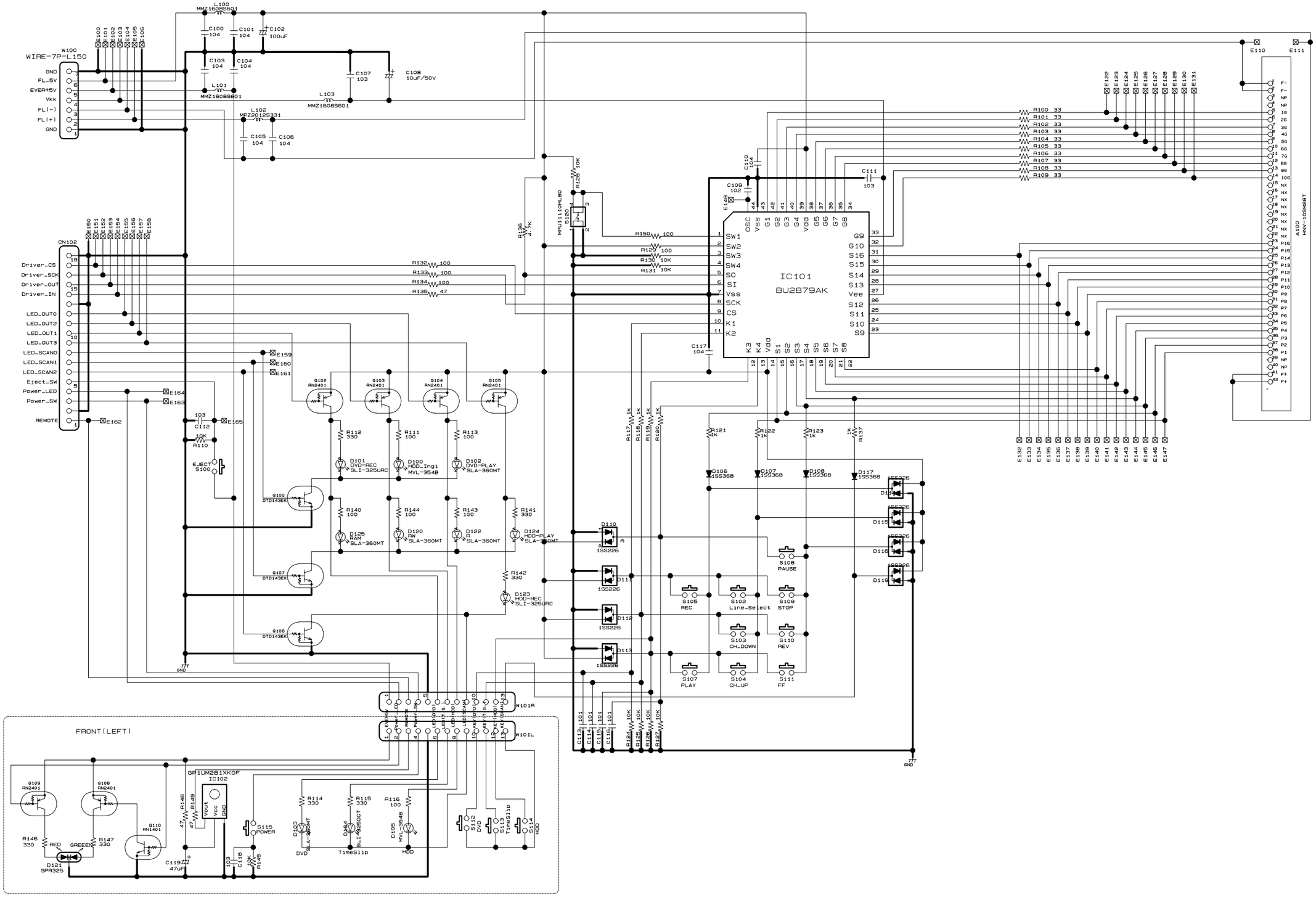


Fig. 3-4-3

4-3. Digital Circuit Diagram

4-3-1. Digital 1 Circuit Diagram

EMMA2R

uD61171F1

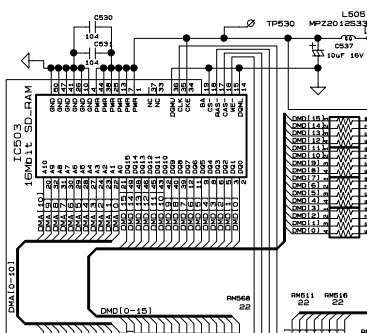
UPD72893

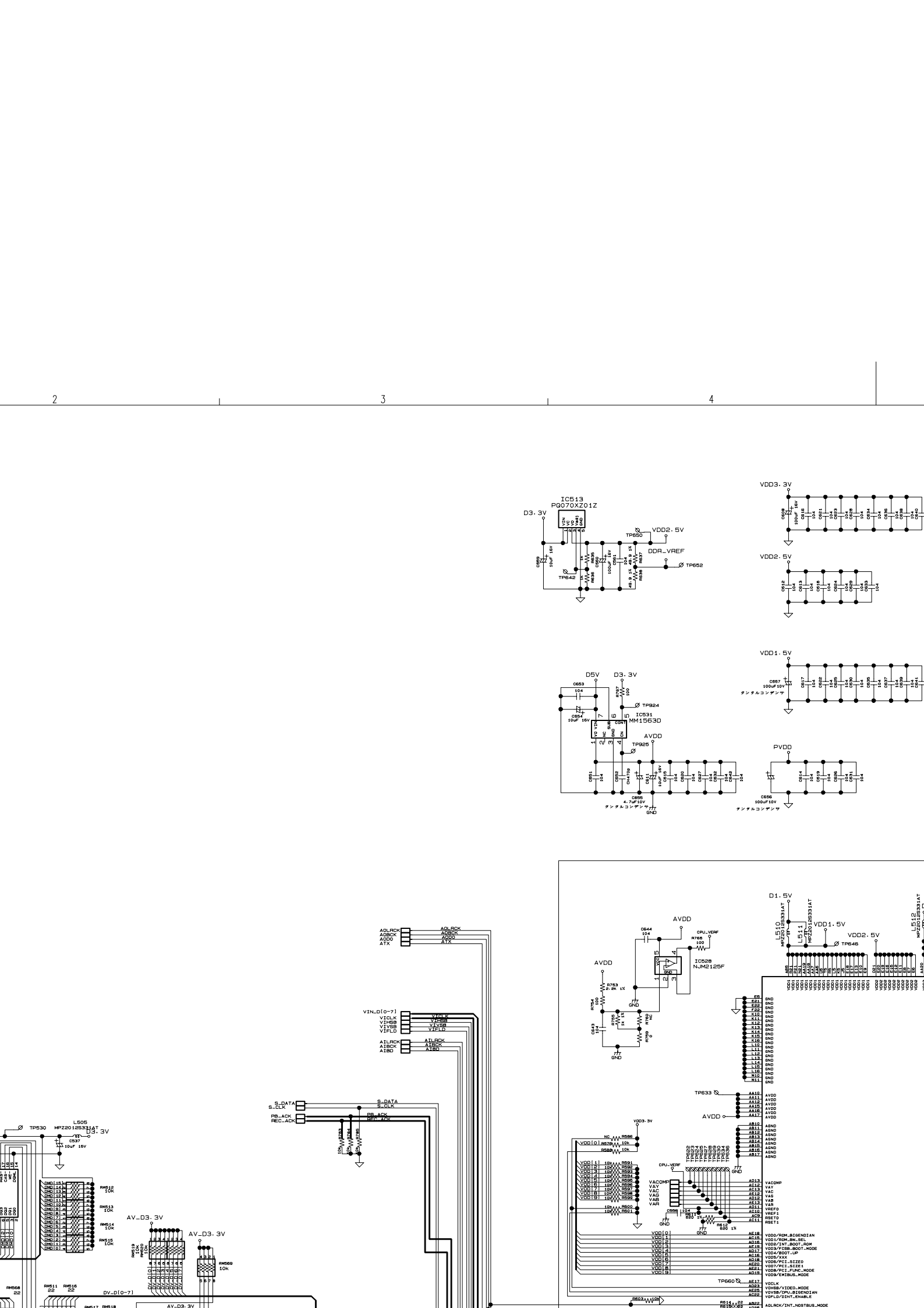
UPD72852

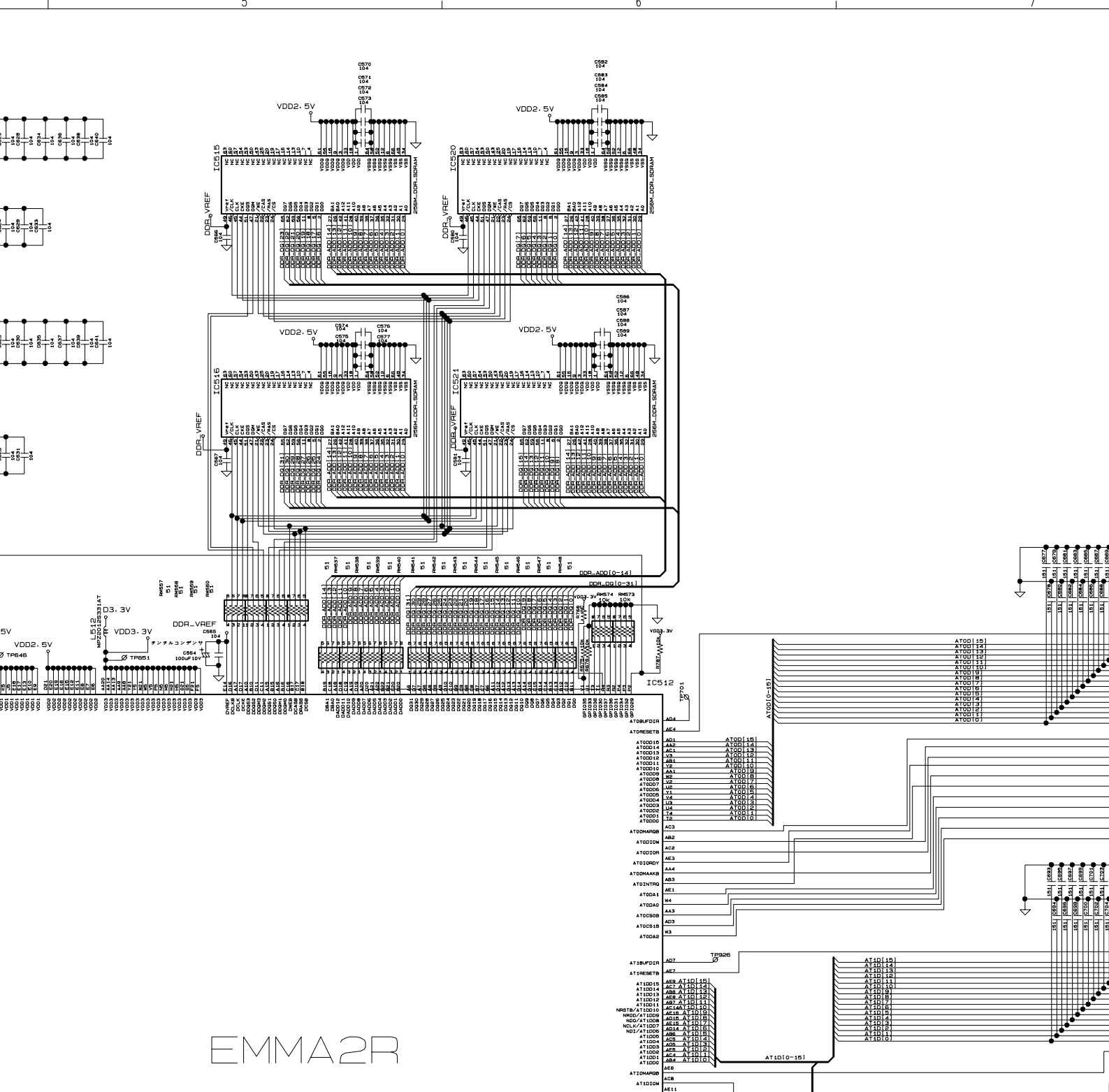
Fig. 3-4-4

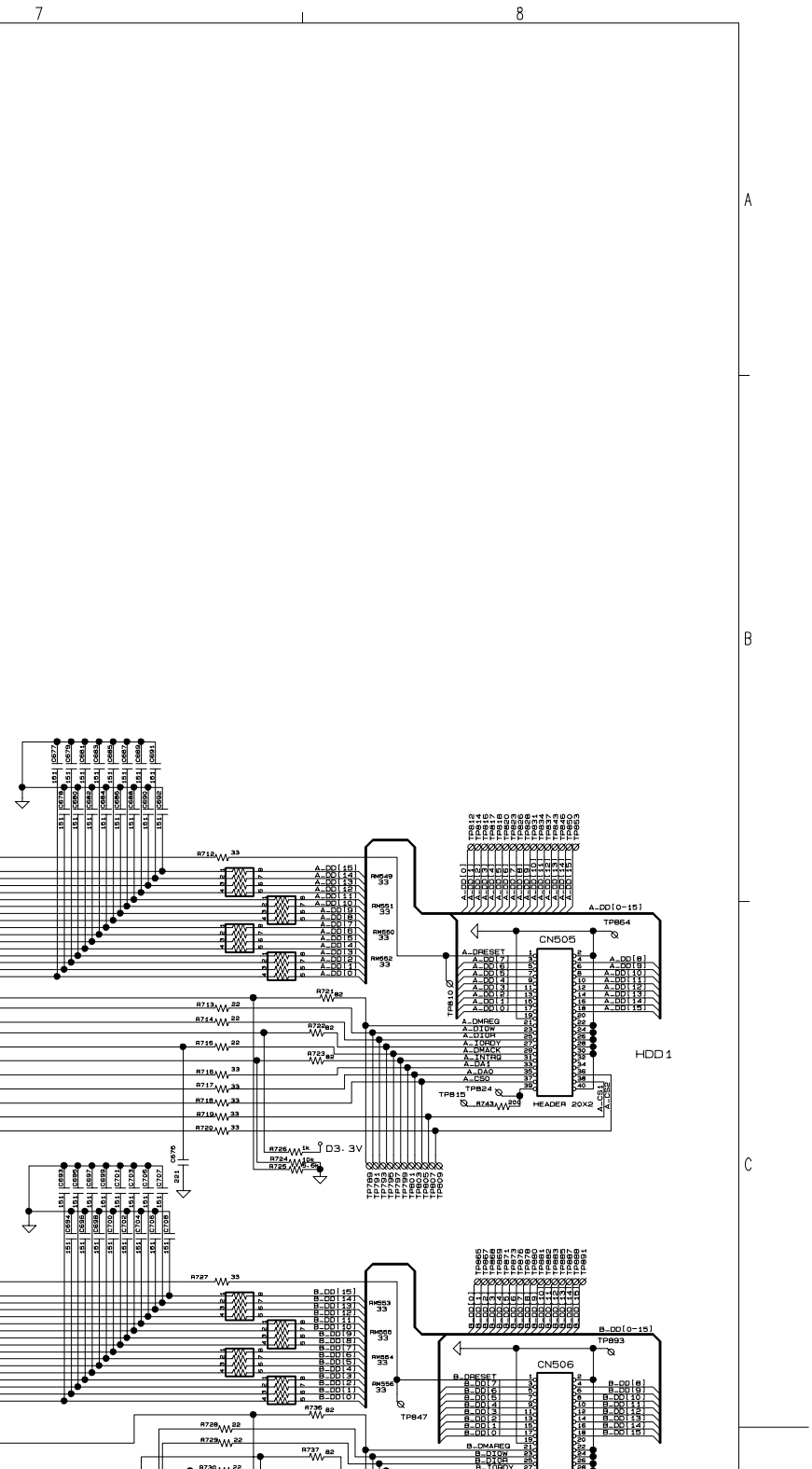
4-3. Digital Circuit Diagram

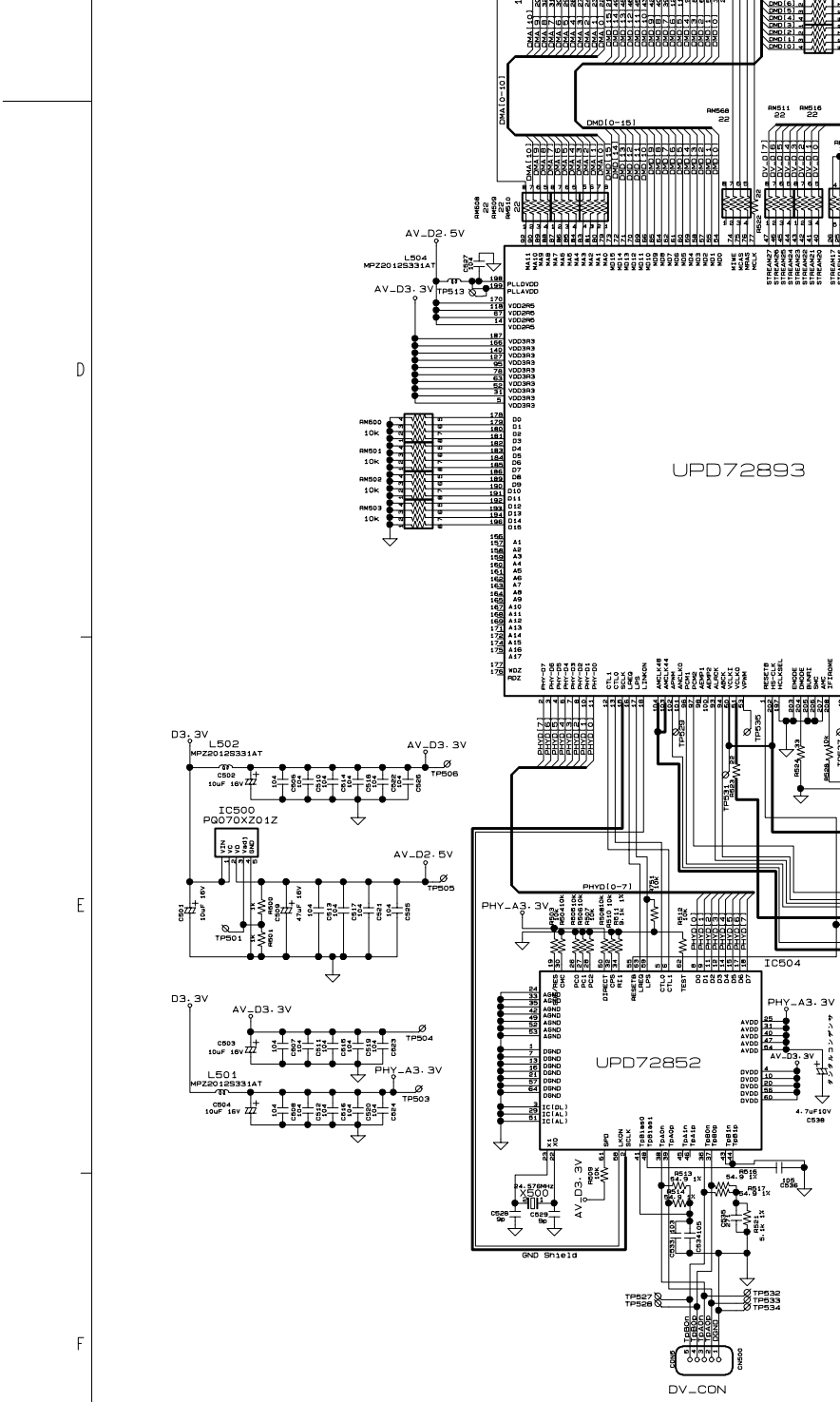
4-3-1. Digital 1 Circuit Diagram

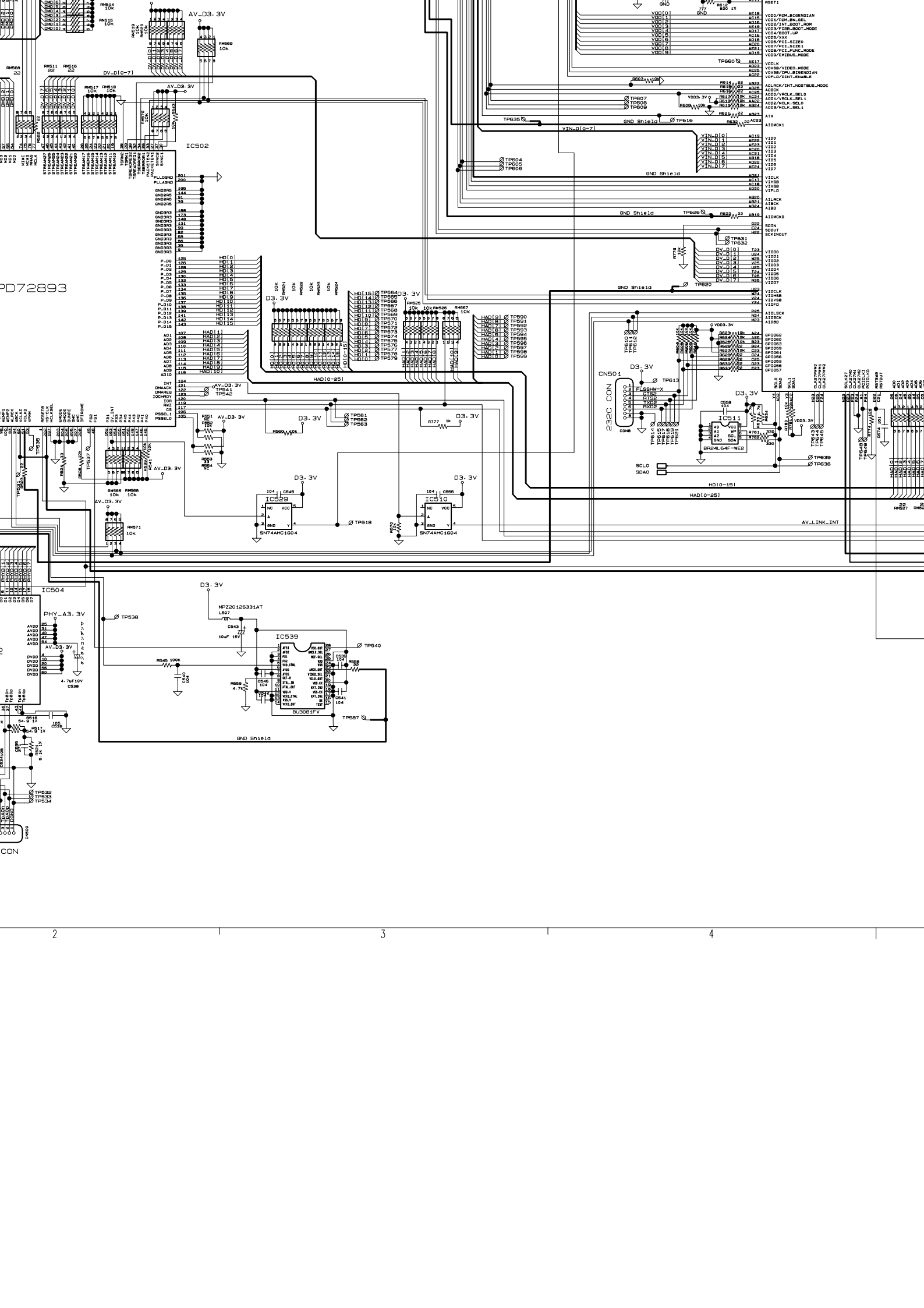



2
3
4
IC513
PQ070XZ01Z
D3.3V
VDD2.5V
DDR_VREF
TP650
TP652
TP642
VDD3.3V
VDD2.5V
VDD1.5V
D5V
D3.3V
IC531
MM1563D
AVDD
TP924
TP925
PVDD
AOLACK
AOBCK
AODO
ATX
VIN_D[0-7]
VIGLK
VIHSB
VIVSB
VIFLD
AILACK
AIBCK
AIBO
S_DATA
S_CLK
PB_ACK
REC_ACK
L505
TP530
MPZ2012S331AT
L3.3V
AV_D3.3V
DV_D[0-7]
IC528
NJM2125F
CPU_VERF
TP633
TP660
VDD1.5V
VDD2.5V
TP646
L510
L511
L512


5
6
7
VDD2.5V
VDD3.3V
DDR_VREF
DDR_ADD[0-14]
DDR_DQ[0-31]
IC512
AT0D[0-15]
AT1D[0-15]
EMMA2R

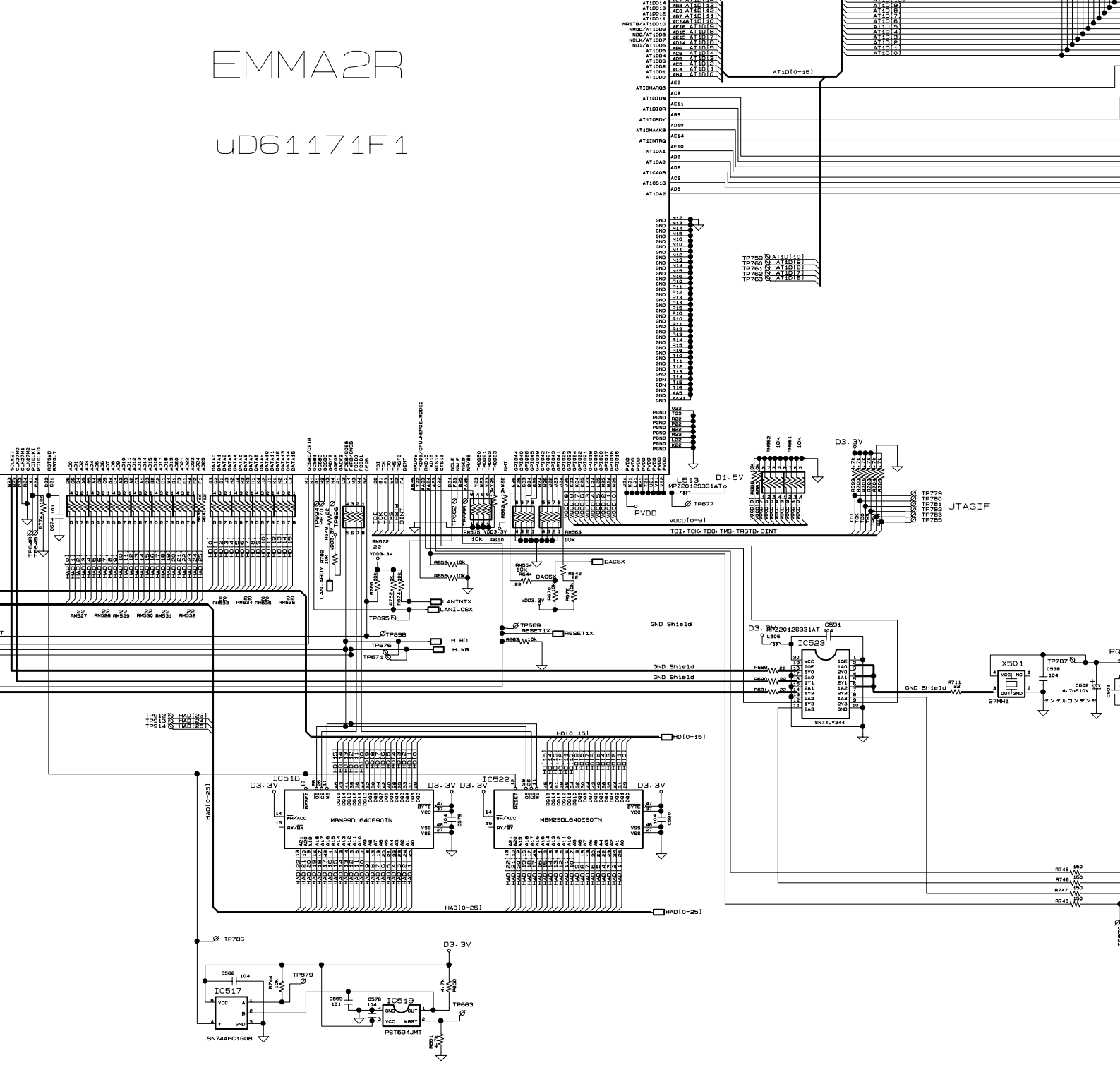

7
8
A
B
C
CN505
HDD1
HEADER 20X2
A_DD[0-15]
TP864
TP810
TP824
TP815
R743
200
CN506
B_DD[0-15]
TP893
TP847
D3.3V
R718
R727
R721
R722
R723
R724
R725
R726
R735
R736
R737
R738
RM549
RM551
RM550
RM552
RM553
RM555
RM554
RM556
C675
C676

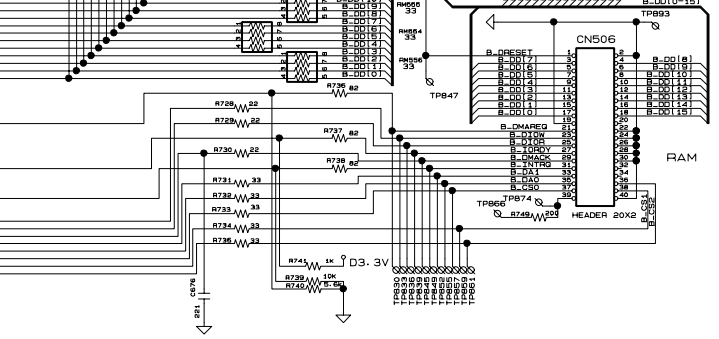

UPD72893
UPD72852
IC504
IC500
PQ070XZ01Z
L502
L504
L501
MPZ2012S331AT
AV_D2.5V
AV_D3.3V
PHY_A3.3V
D3.3V
DV_CON
GND Shield
DMA[0-10]
DMD[0-15]
PHYD[0-7]

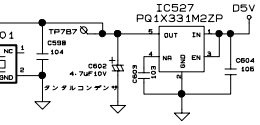

PD72893
IC502
IC504
IC529
IC510
IC539
IC511
SN74AHC1G04
BU3081FV
BR24L64F-WE2
CN501
232C CON
CON8
CON
AV_D3.3V
D3.3V
PHY_A3.3V
GND Shield
HD[0-15]
HAD[0-25]
VIN_D[0-7]
DV_D[0-7]
AV_LINK_INT
SCL0
SDA0
MPZ2012S331AT
4.7uF10V
10uF 16V
VDD3.3V

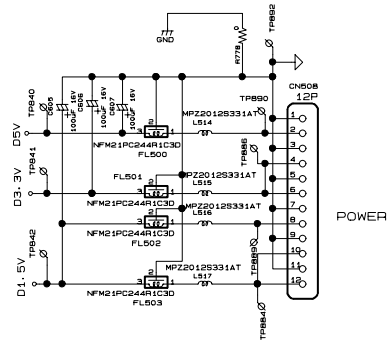
EMMA2R

uD61171F1




CN506
RAM
HEADER 20X2
D3.3V


IC527
PQ1X331M2ZP
D5V


CN508
12P
POWER
D5V
D3.3V
D1.5V

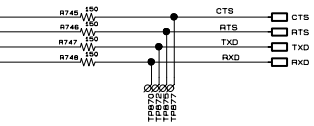

CTS
RTS
TXD
RXD
TIMER

Fig. 3-4-4

4-3-2. Digital 2 Circuit Diagram

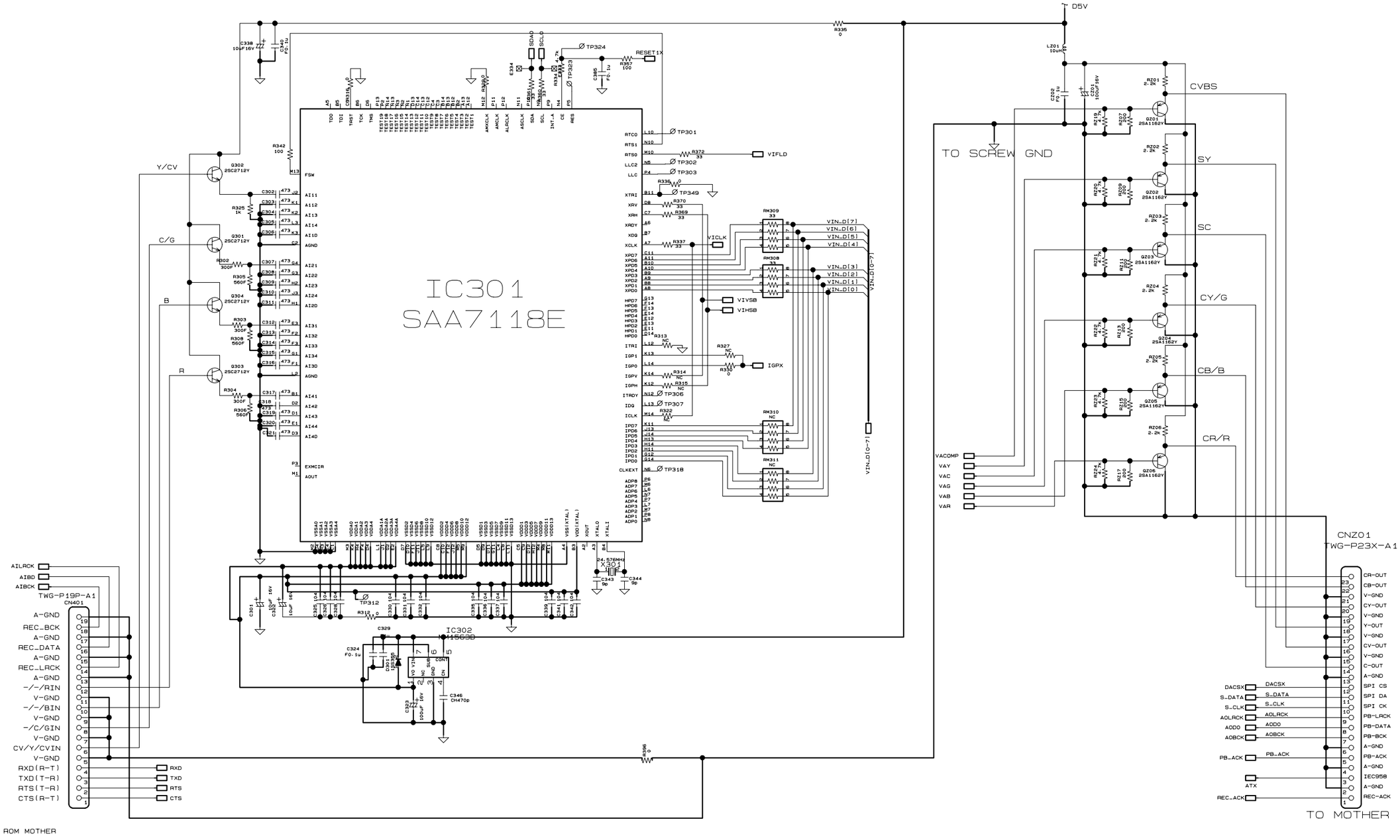


Fig. 3-4-5

4-4. Mother Circuit Diagram

4-4-1. Tuner Circuit Diagram

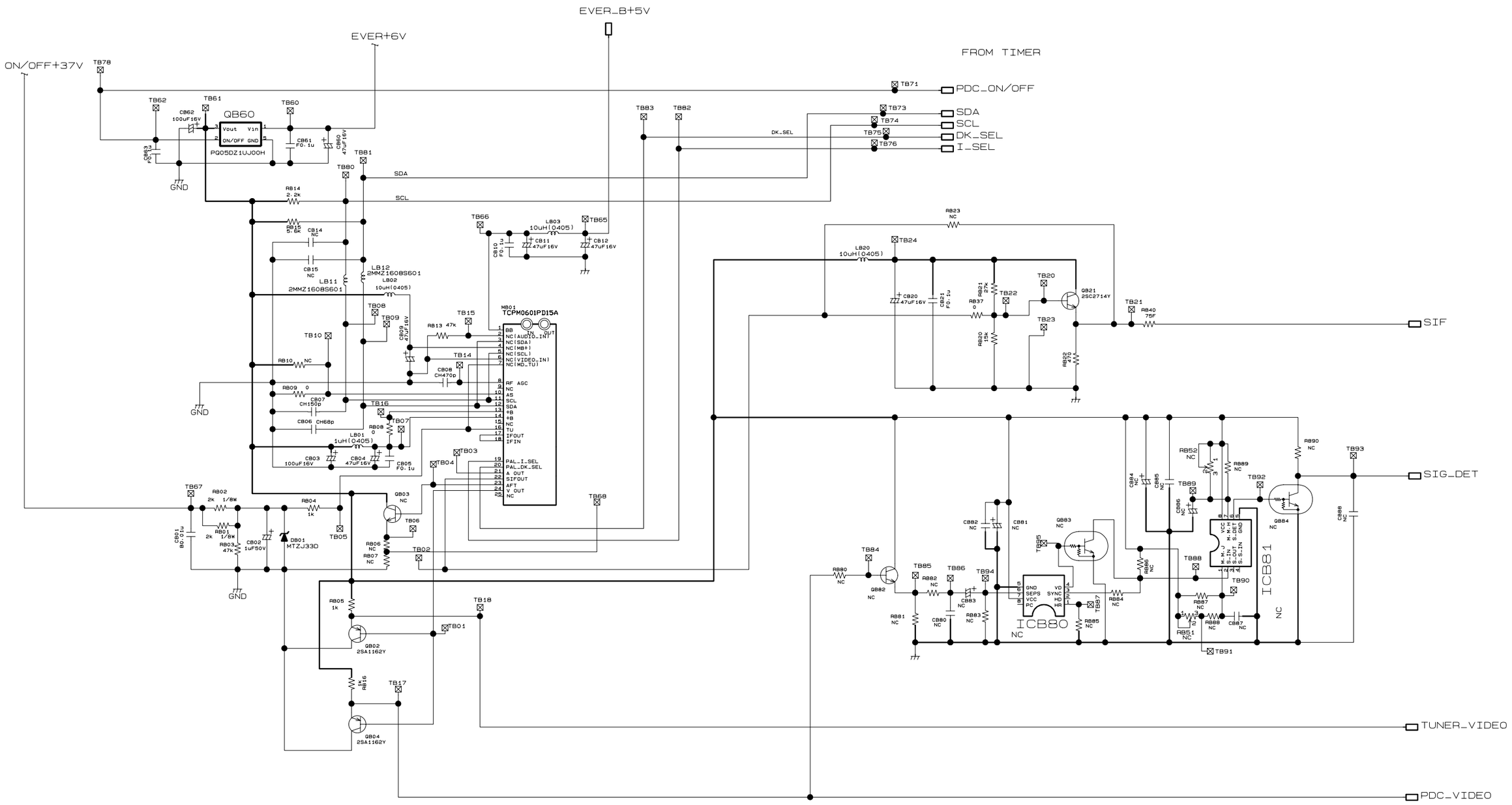


Fig. 3-4-6

4-4-2. Timer Circuit Diagram

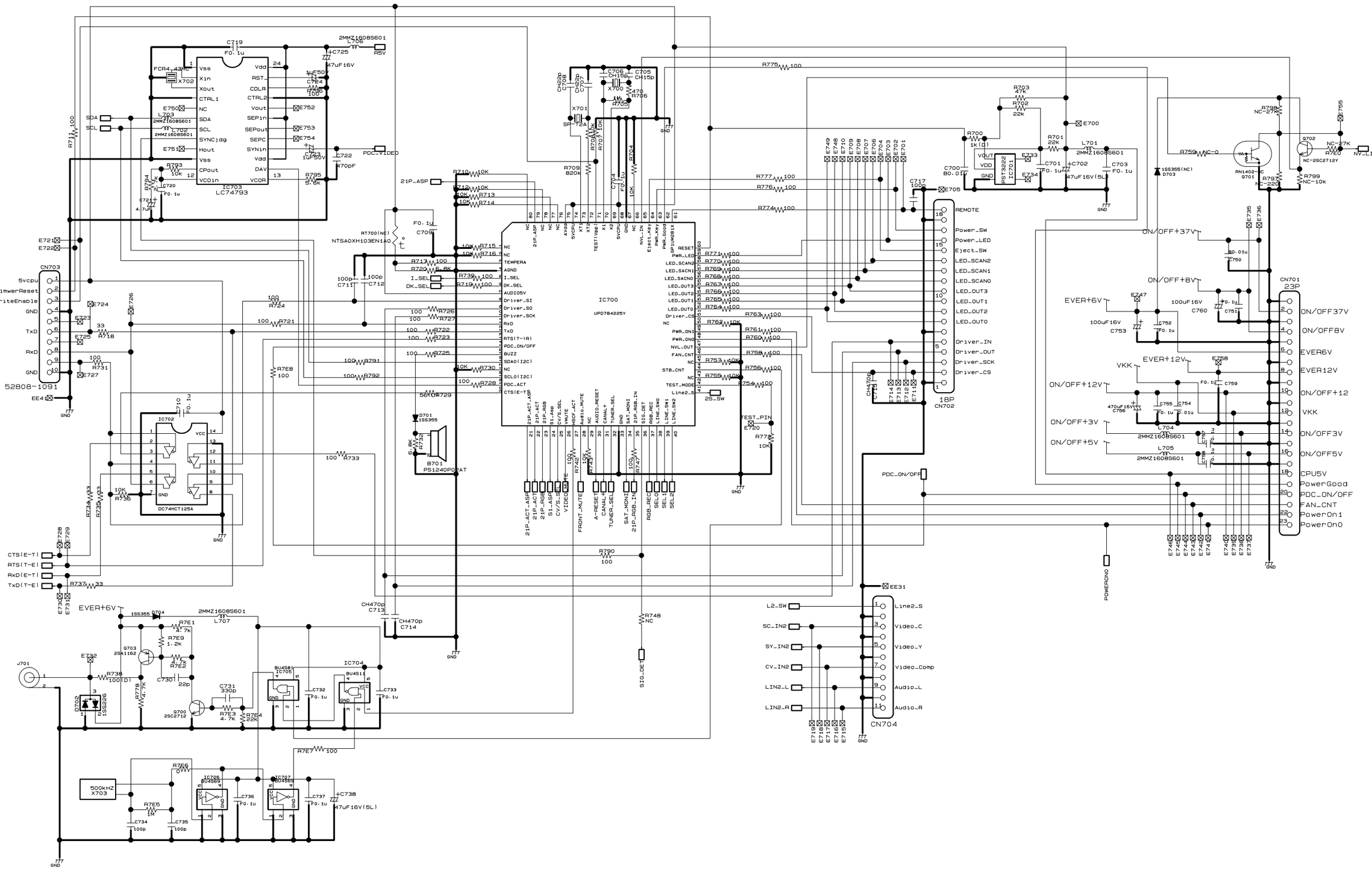
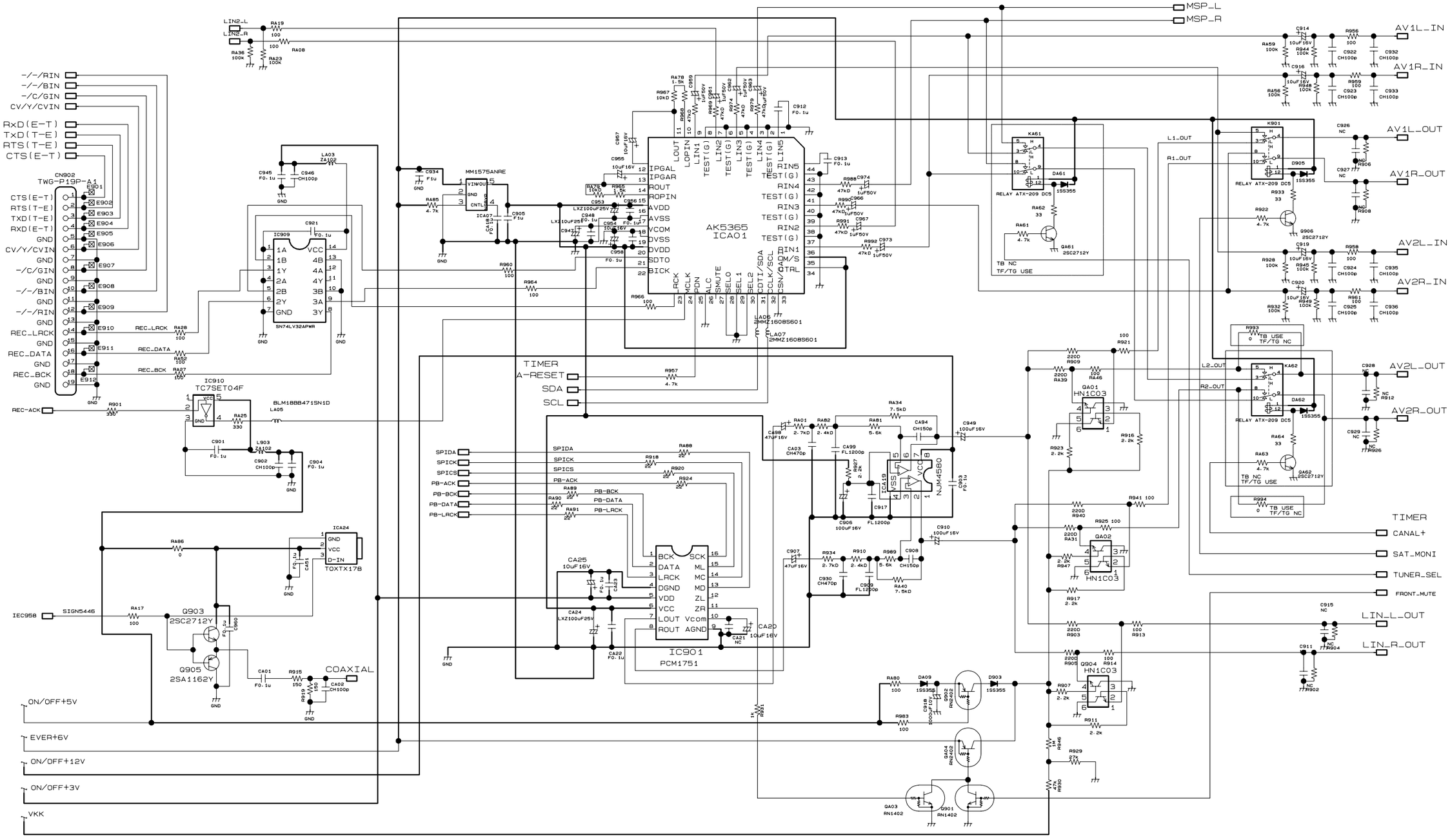


Fig. 3-4-7

4-4-3. Audio Circuit Diagram

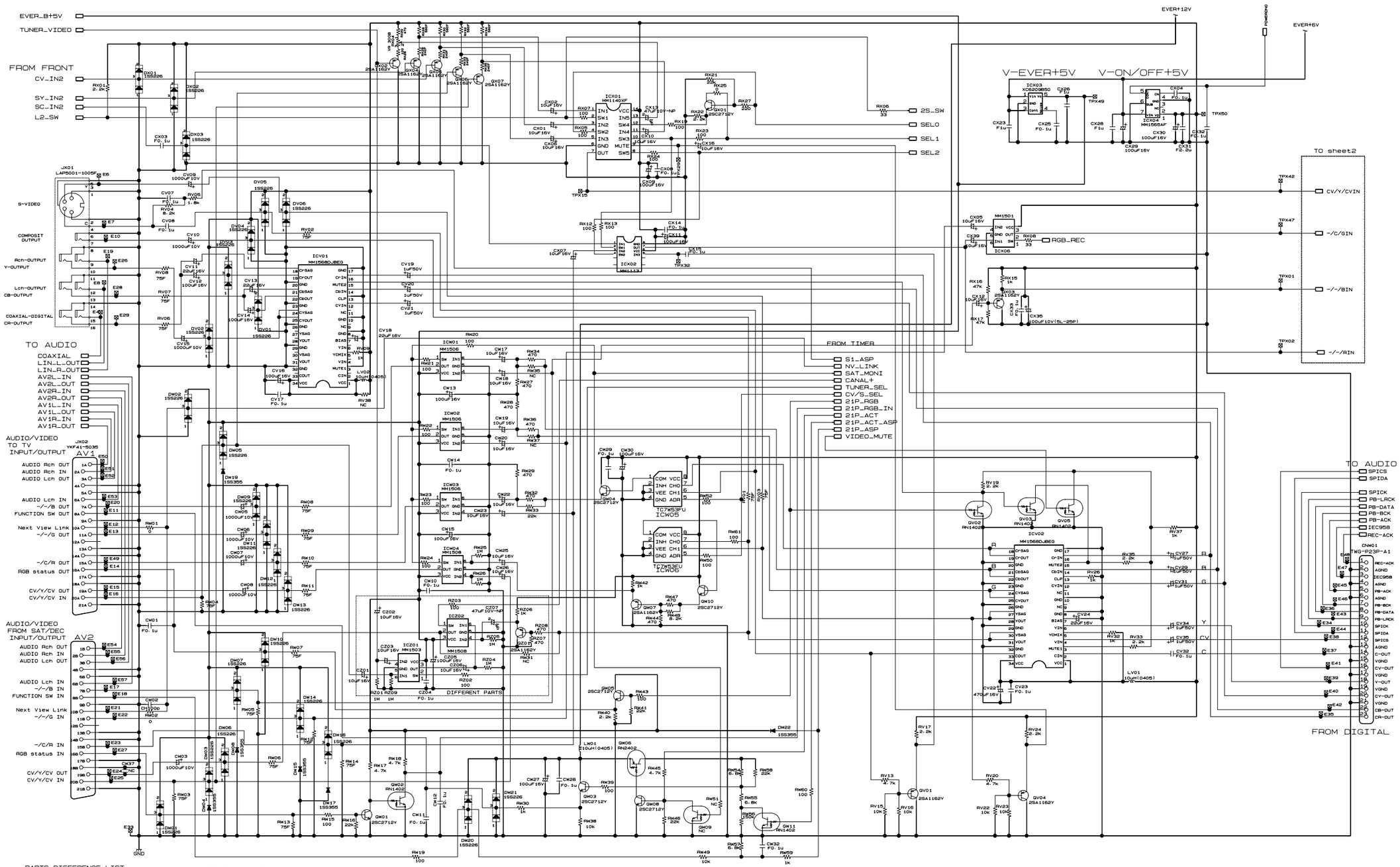


SYMBOL DIFFERENCE LIST

SYMBOL \ MODEL	XS32-SB	XS32-SF/SG
KA61 KA62 DA61 DA62 QA61 QA62 RA61 RA62 RA63 RA64	NC	USE
R993 R994	USE	NC

Fig. 3-4-8

4-4-4. Video Circuit Diagram



PARTS DIFFERENCE LIST

MODEL	*Z**	RW31
SB	NC	0
SF/SG	USE	NC

PARTS DIFFERENCE LIST

MODEL	*Z**	RW31
SB	NC	0
SF/SG	USE	NC

Fig. 3-4-9

4-4-5. MSP Circuit Diagram

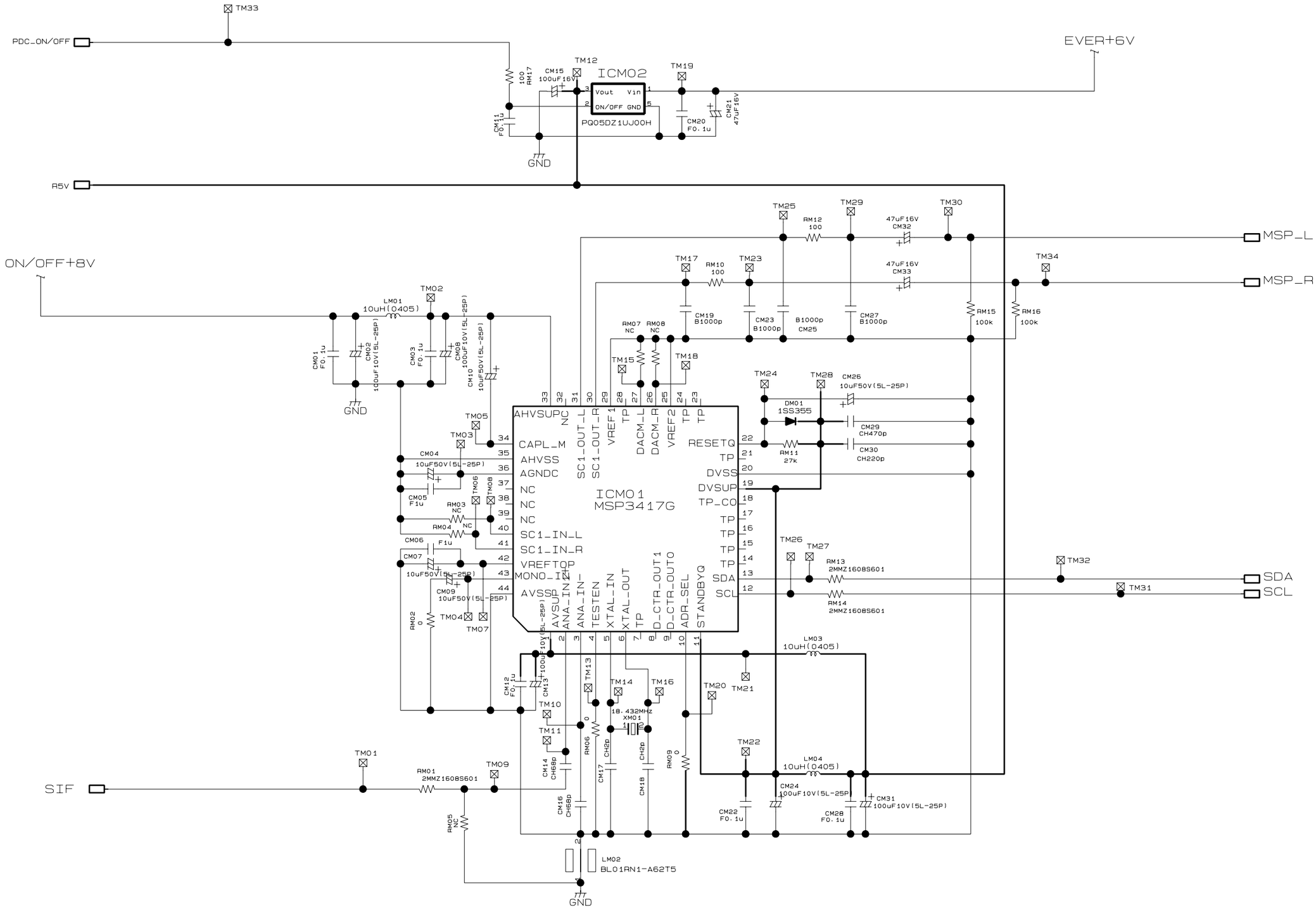


Fig. 3-4-10

5. PC BOARDS

5-1. Front Jack PC Board

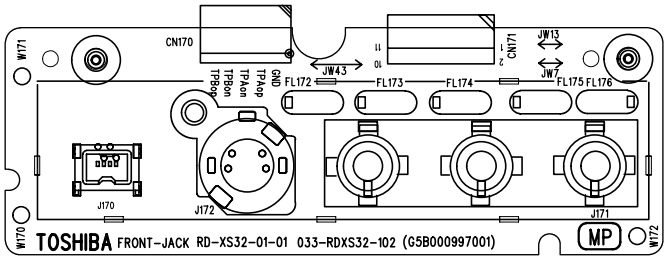


Fig. 3-5-1 EU55 Front Jack PC Broad (Top side)

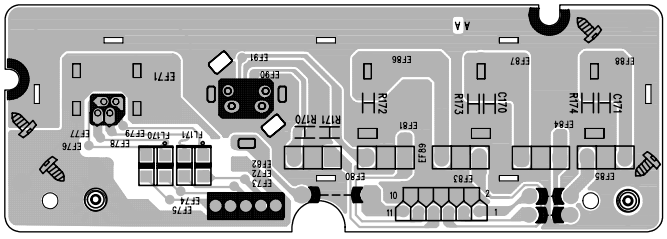


Fig. 3-5-2 EU55 Front Jack PC Broad (Bottom side)

5-2. Front (L) PC Board

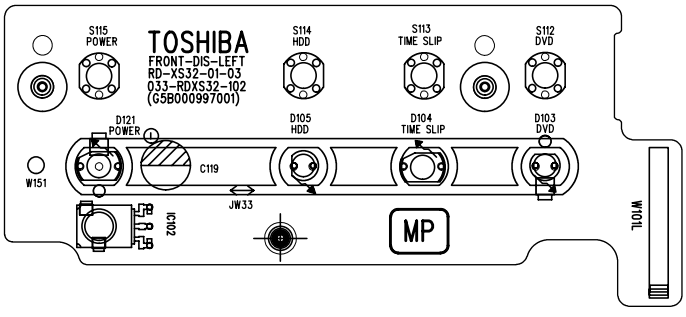


Fig. 3-5-3 EU03B Front (L) PC Broad (Top side)

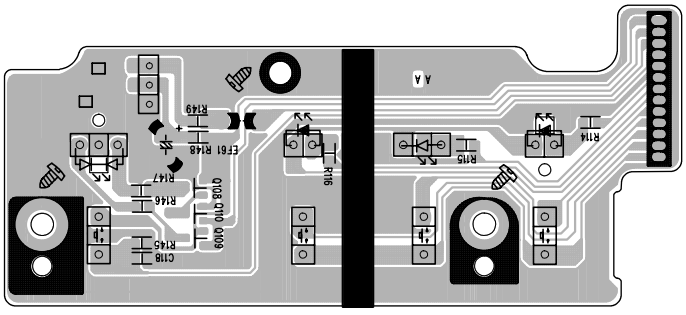


Fig. 3-5-4 EU03B Front (L) PC Broad (Bottom side)

5-3. Front (R) PC Board

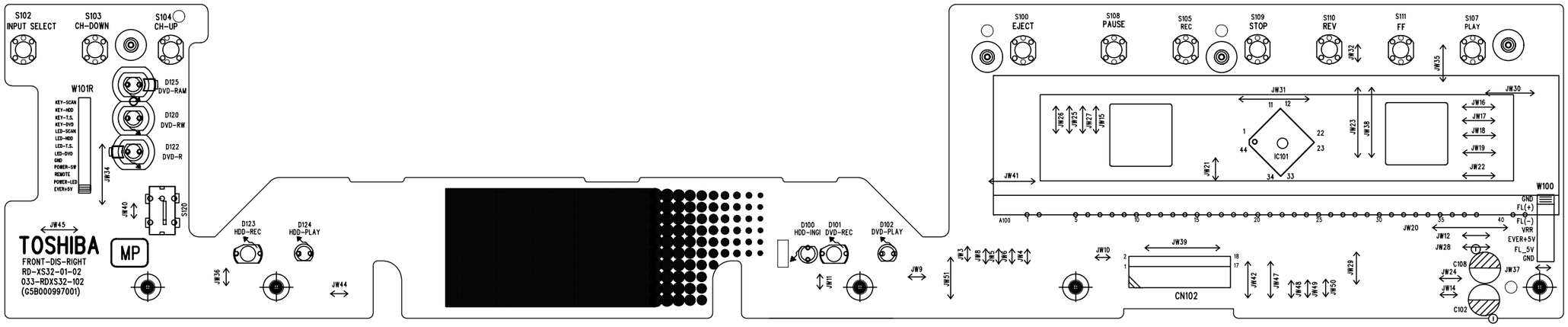


Fig. 3-5-5 EU03A Front (R) PC Broad (Top side)

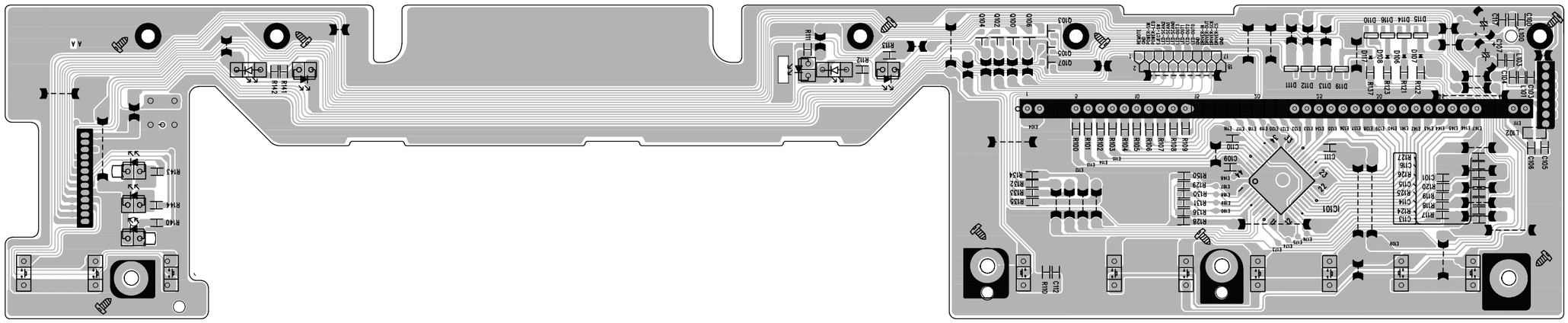


Fig. 3-5-6 EU03A Front (R) PC Broad (Bottom side)

5-4. Digital PC Board

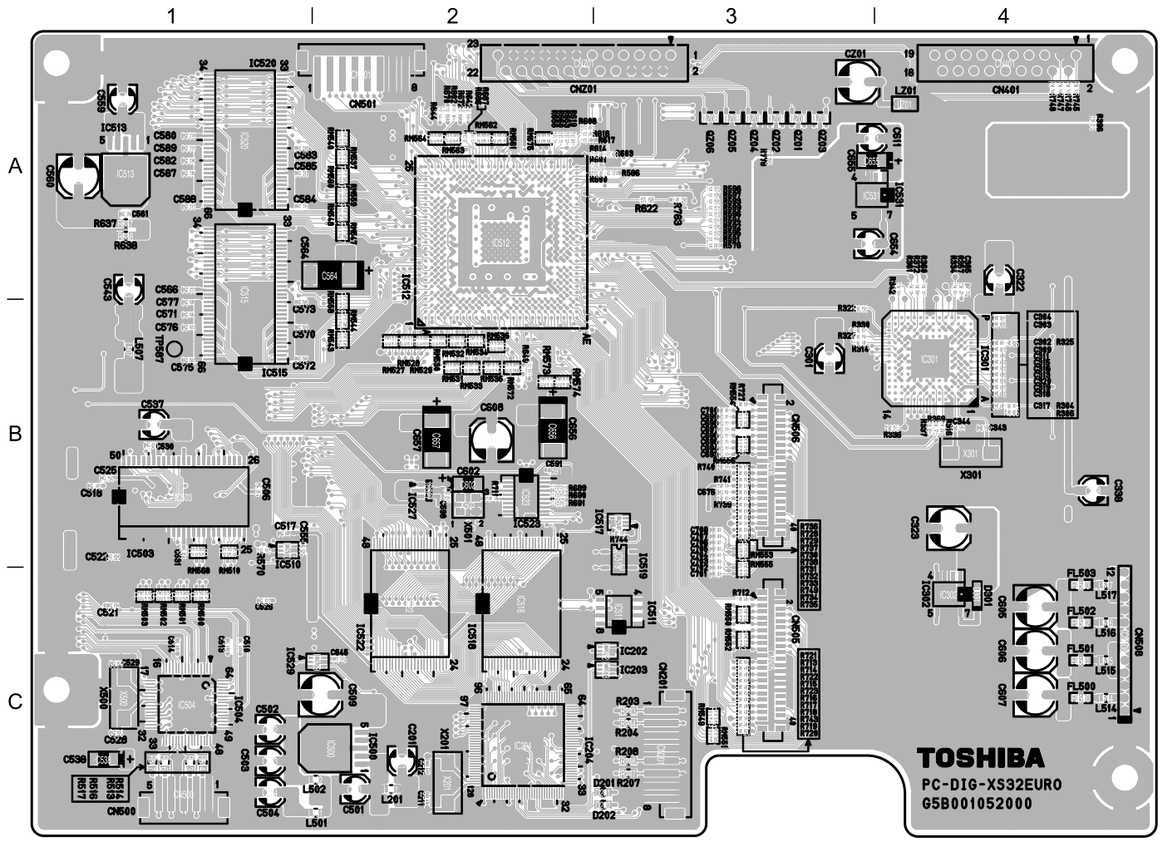


Fig. 3-5-7 EU01 Digital PC Board (Top side)

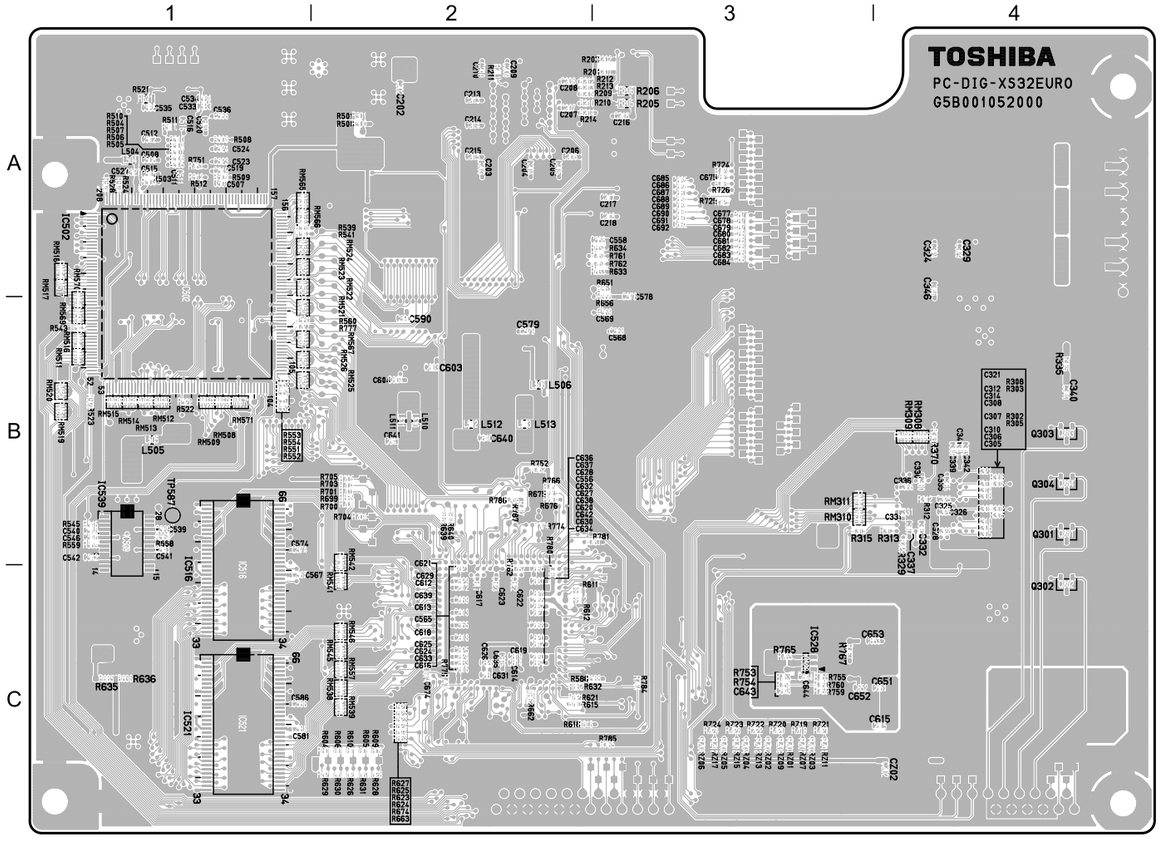


Fig. 3-5-8 EU01 Digital PC Board (Bottom side)

5-5. Mother PC Board

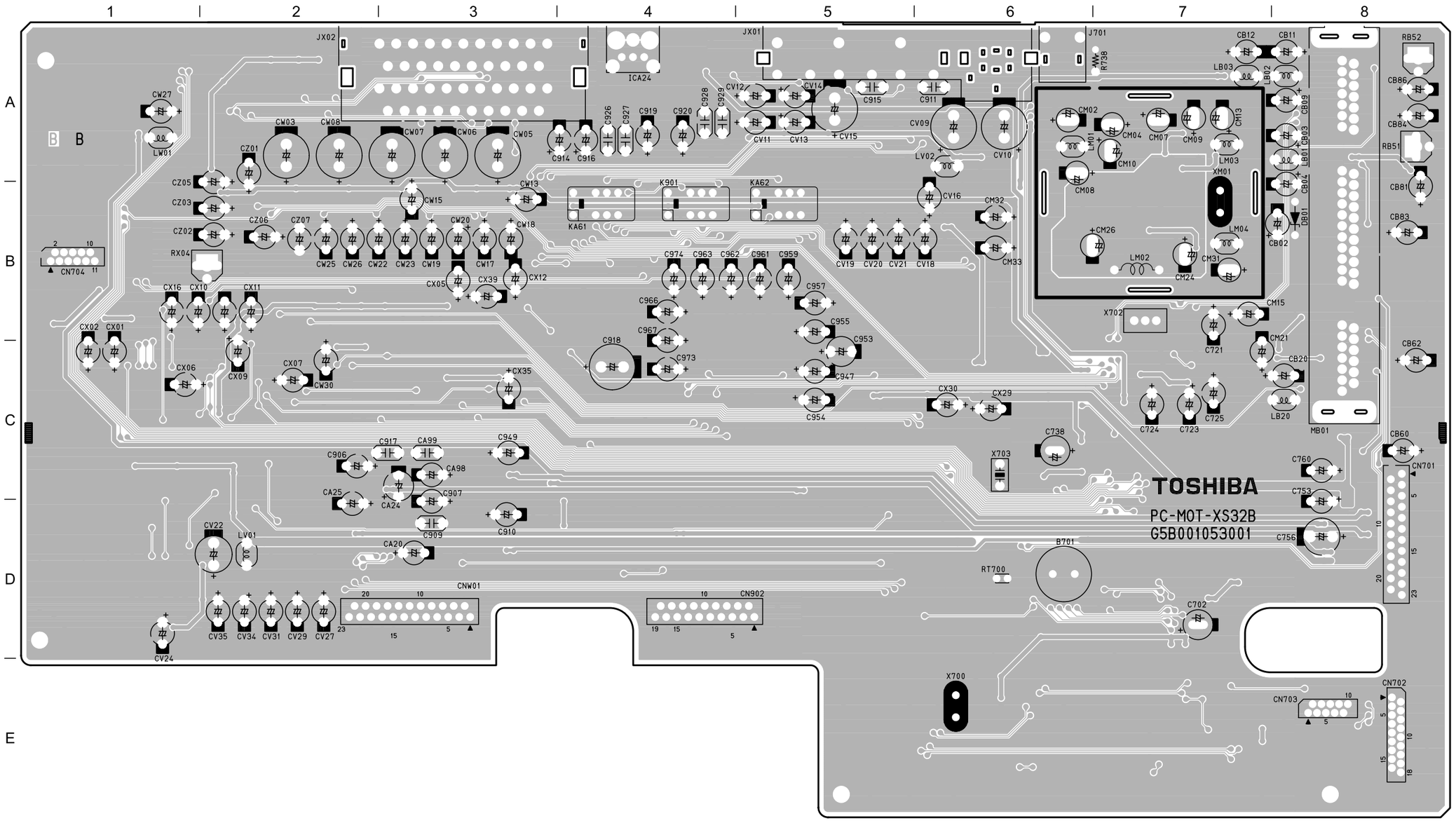


Fig. 3-5-9 EU05 Mother PC Board (Top side)

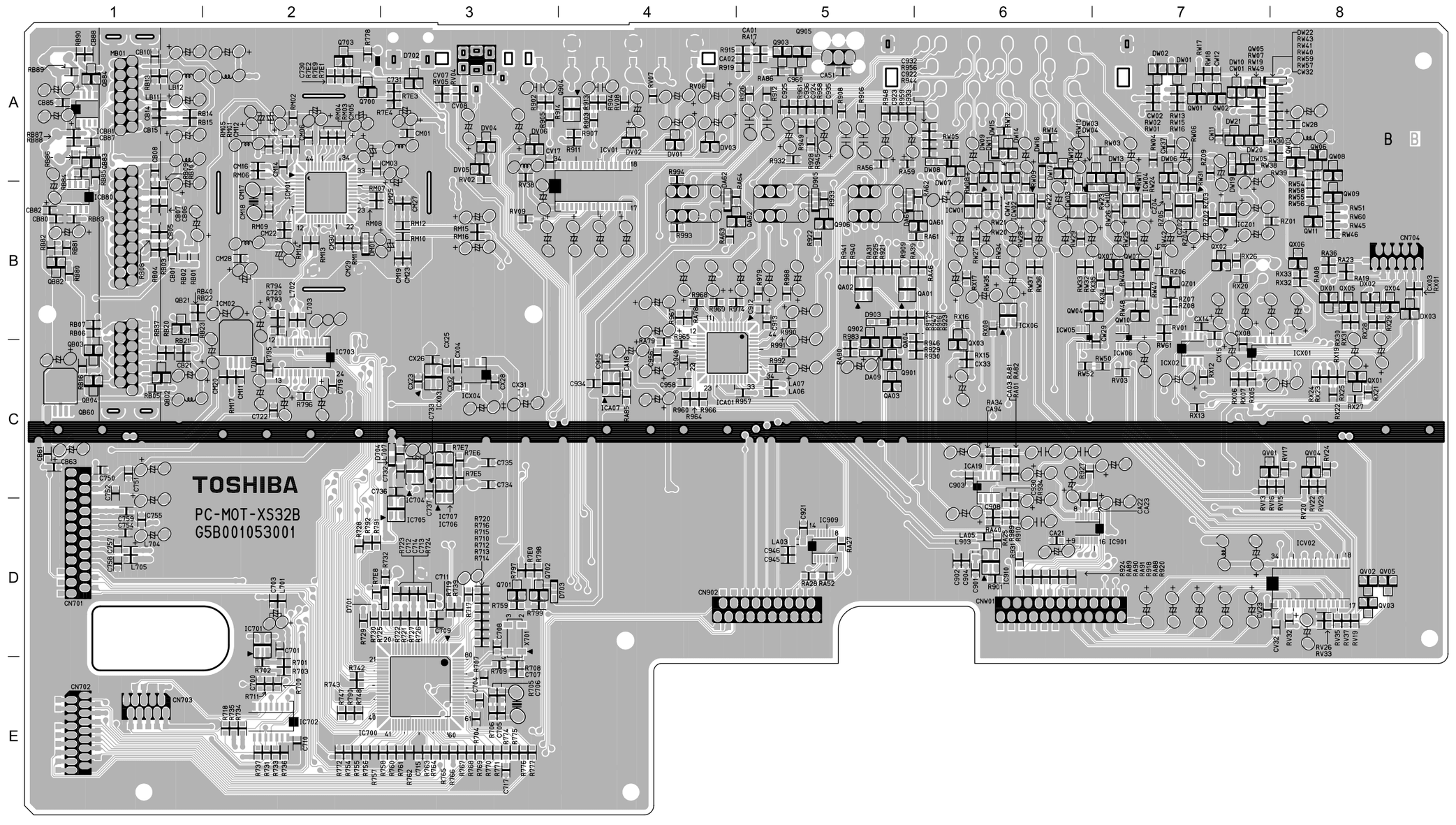


Fig. 3-5-10 EU05 Mother PC Board (Bottom side)

SECTION 4
PARTS LIST

SAFETY PRECAUTION

The parts identified by ! (⚠) mark are critical for safety. Replace only with part number specified.

The mounting position of replacement is to be identical with originals.

The substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

NOTICE

The part number must be used when ordering parts in order to assist in processing, be sure to include the model number and description.

ABBREVIATIONS

1. Integrated Circuit (IC)

2. Capacitor (Cap)

- **Capacitance Tolerance (for Nominal Capacitance more than 10pF)**

Table 4-2-1

Symbol	B	C	D	F	G	J	K	M	N
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20	± 30

Symbol	P	Q	T	U	V	W	X	Y	Z
Tolerance %	+ 100 0	+ 30 – 10	+ 50 – 10	+ 75 – 10	+ 20 – 10	+ 100 – 10	+ 40 – 20	+ 150 – 10	+ 80 – 20

Ex. 10µF J = 10µF ± 5%

- **Capacitance Tolerance (for Nominal Capacitance 10pF or less)**

Table 4-2-2

Symbol	B	C	D	F	G
Tolerance pF	± 0.1	± 0.25	± 0.5	± 1	± 2

Ex. 10pF G = 10pF ± 2pF

3. Resistor (Res)

- **Resistance tolerance**

Table 4-3-1

Symbol	B	C	D	F	G	J	K	M
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20

Ex. 470ΩJ = 470Ω± 5%

4. EXPLODED VIEWS

4-1. Packing Assembly

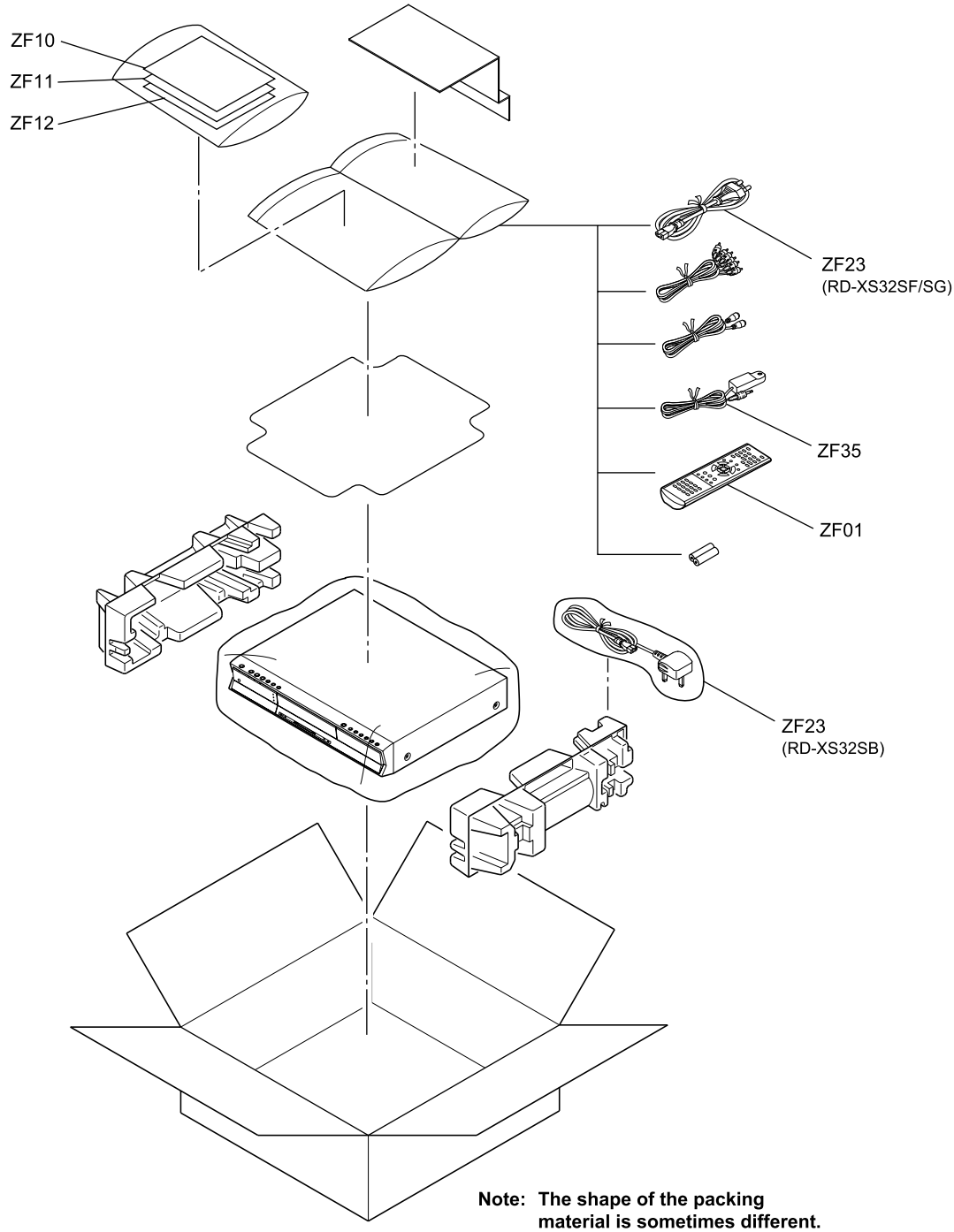


Fig. 4-4-1

4-2. Chassis Assembly

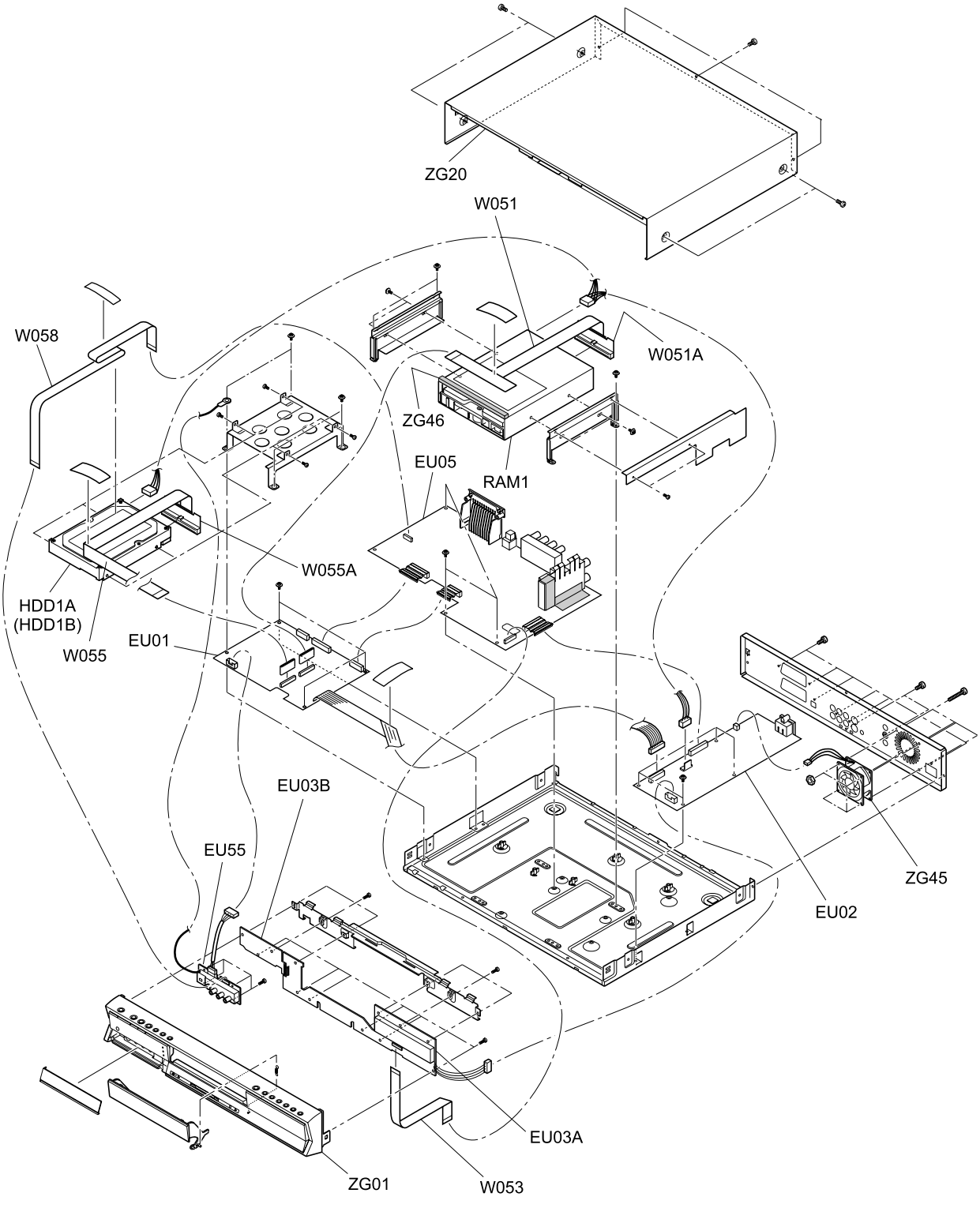


Fig. 4-4-2

5. PARTS LIST

	LOCATION NUMBER	PART NUMBER	DESCRIPTION	
			- MECHANICAL PARTS -	
	HDD1A	P000401240	HDD,ST380012ACE	80GB
	HDD1B	P000401250	HDD,4R080L0	80GB
!	RAM1	P000391340	DVD-RAM	SD-W3002-TC
	W051	P000387340	Cable,Flexible	FFC,40P,L360
	W051A	P000391300	CONV Unit,ATAPI-FFC	
	W053	P000405150	Cable,Flexible	FFC,18P,L200
	W055	P000405110	Cable,Flexible	FFC,40P,L240
	W055A	P000391300	CONV Unit,ATAPI-FFC	
	W058	P000405130	Cable,Flexible,	FFC,11P,L360
	ZF01	P000405140	Remote Control Unit,SE-R0132,RD-XS32SB	
	ZF01	P000405350	Remote Control Unit,SE-R0133,RD-XS32SF/SG	
!	ZF10A	P000403710	Owners Manual,OP-XS32B,English	
!	ZF10B	P000403740	Owners Manual,OP-XS32F,English	
!	ZF10D	P000403760	Owners Manual,OP-XS32F,French	
!	ZF10C	P000403780	Owners Manual,OP-XS32G,English	
!	ZF10E	P000403800	Owners Manual,OP-XS32G,French	
!	ZF10G	P000403820	Owners Manual,OP-XS32G,Italy	
!	ZF10I	P000403840	Owners Manual,OP-XS32G,Spanish	
!	ZF10K	P000403860	Owners Manual,OP-XS32G,Germany	
!	ZF11A	P000403700	Owners Manual,ST-XS32B,English	
!	ZF11B	P000403730	Owners Manual,ST-XS32F,English	
!	ZF11D	P000403750	Owners Manual,ST-XS32F,French	
!	ZF11C	P000403770	Owners Manual,ST-XS32G,English	
!	ZF11E	P000403790	Owners Manual,ST-XS32G,French	
!	ZF11G	P000403810	Owners Manual,ST-XS32G,Italy	
!	ZF11I	P000403830	Owners Manual,ST-XS32G,Spanish	
!	ZF11K	P000403850	Owners Manual,ST-XS32G,Germany	
!	ZF12	P000403720	Quick Manual.Q-XS32B,English	
!	ZF23	79088034	Power Cord,UK	RD-XS32SB
!	ZF23	79088010	Power Cord,UE	RD-XS32SF/SG
	ZF35	P000401300	IR-Blaster	RWS1000-0052L
	ZG01	P000405100	Front Panel,Silver	RD-XS32SB
	ZG01	P000405340	Front Panel,Silver	RD-XS32SF/SG
	ZG20	P000387330	Cover,Top	
	ZG45	P000401260	Fan,DC	5025LL12SND2
	ZG46	P000405400	Door,Cushion	

LOCATION NUMBER	PART NUMBER	DESCRIPTION	
		- ELECTRICAL PARTS -	
EU01	P000404980	PC Board Assy	Digital,RD-XS32SB
EU01	P000405360	PC Board Assy	Digital,RD-XS32SF
EU01	P000405380	PC Board Assy	Digital,RD-XS32SG
		- INTEGRATED CIRCUITS -	
IC302	P000377900	IC	MM1563DFBE
IC500	P000391280	IC	PQ070XZ01ZPH
IC502	P000405070	IC	UPD72893
IC503	79040163	IC	MT48LC1M16A1TG
IC504	P000391230	IC	UPD72852AGB-8EU
IC510	P000378050	IC	SN74AHC1G04HDCKR
IC513	P000391280	IC	PQ070XZ01ZPH
IC515	P000391210	IC	K4H560838D-TCB000
IC516	P000391210	IC	K4H560838D-TCB000
IC517	P000378040	IC	SN74AHC1G08HDCKR
IC519	79040306	IC	PST594JMT
IC520	P000391210	IC	K4H560838D-TCB000
IC521	P000391210	IC	K4H560838D-TCB000
IC523	P000377920	IC	SN74LV244APWR
IC527	P000391290	IC	PQ1X331M2ZPH
IC528	P000391240	IC	NJM2125F
IC529	P000378050	IC	SN74AHC1G04HDCKR
IC531	P000377900	IC	MM1563DFBE
IC539	P000401220	IC	BU3081FV-E2
		- TRANSISTORS -	
Q301	79050016	Transistor,Chip	2SC2712
Q302	79050016	Transistor,Chip	2SC2712
Q303	79050016	Transistor,Chip	2SC2712
Q304	79050016	Transistor,Chip	2SC2712
QZ02	79050018	Transistor,Chip	2SA1162
QZ03	79050018	Transistor,Chip	2SA1162
QZ04	79050018	Transistor,Chip	2SA1162
QZ05	79050018	Transistor,Chip	2SA1162
QZ06	79050018	Transistor,Chip	2SA1162
		- DIODES -	
D301	79060019	Diode,Chip	1SS355
		- MISCELLANEOUS -	
X301	79089168	Oscillator,Crystal	
X500	79089168	Oscillator,Crystal	
X501	P000377990	Crystal	27.0M
! EU02	P000405120	PC Board Assy	Power
EU03A	P000405160	PC Board Assy	Front(R) Display
		- INTEGRATED CIRCUITS -	
IC101	P000377960	IC	BU2879AK
		- TRANSISTORS -	
Q100	P000391100	Transistor	DTD143EK
Q102	79050089	Transistor	RN2401
Q103	79050089	Transistor	RN2401
Q104	79050089	Transistor	RN2401
Q105	79050089	Transistor	RN2401
Q106	P000391100	Transistor	DTD143EK
Q107	P000391100	Transistor	DTD143EK
		- DIODES -	
D100	79060091	Diode,LED	LED, MVL-354B-T
D101	79060100	Diode,LED	SLI-325URCT31
D102	79060077	Diode,LED	SLA-360MT
D106	79060022	Diode,Chip	1SS368
D107	79060022	Diode,Chip	1SS368
D108	79060022	Diode,Chip	1SS368
D117	79060022	Diode,Chip	1SS368
D120	79060077	Diode,LED	SLA-360MT
D122	79060077	Diode,LED	SLA-360MT
D123	79060100	Diode,LED	SLI-325URCT31
D124	79060077	Diode,LED	SLA-360MT
D125	79060077	Diode,LED	SLA-360MT
		- MISCELLANEOUS -	
A100	P000391090	Display FL	HNV-10SM28T
S100	P000391050	Switch,Tact	
S102	P000391050	Switch,Tact	
S103	P000391050	Switch,Tact	
S104	P000391050	Switch,Tact	
S105	P000391050	Switch,Tact	
S107	P000391050	Switch,Tact	
S108	P000391050	Switch,Tact	
S109	P000391050	Switch,Tact	
S110	P000391050	Switch,Tact	
S111	P000391050	Switch,Tact	
S120	P000377940	Switch,Push-Lever	
EU03B	P000405170	PC Board Assy	Front(L)
		- INTEGRATED CIRCUITS -	
IC102	P000391110	Module,IR	GP1UM281RK
		- TRANSISTORS -	
Q108	79050089	Transistor	RN2401
Q109	79050089	Transistor	RN2401
Q110	79050009	Transistor,Chip	RN1401
		- DIODES -	
D103	79060077	Diode,LED	SLA-360MT
D104	79060099	Diode,LED	SLI-325DCT31
D105	79060091	Diode,LED	LED, MVL-354B-T
D121	79060033	Diode,LED	
		- MISCELLANEOUS -	
S112	P000391050	Switch,Tact	
S113	P000391050	Switch,Tact	
S114	P000391050	Switch,Tact	
S115	P000391050	Switch,Tact	
EU05	P000404990	PC Board Assy	Mother,RD-XS32SB
EU05	P000405370	PC Board Assy	Mother,RD-XS32SF
EU05	P000405390	PC Board Assy	Mother,RD-XS32SG
		- INTEGRATED CIRCUITS -	
IC700	79040330	IC	UPD78F4225YGC-8
IC701	P000391180	IC	PST3222NR
IC702	P000391150	IC	DC74HCT125M
IC703	P000395140	IC	LC74793
IC704	P000405040	IC	BU4S11G2-TR
IC705	P000405030	IC	BU4S81G2-TR
IC706	P000405050	IC	BU4S69G2-TR
IC707	P000405050	IC	BU4S69G2-TR
IC901	P000401200	IC	PCM1751DBQR
IC909	P000401170	IC	SN74LV32APWR
IC910	P000391120	IC	TC7SET04F
ICA01	P000377930	IC	AK5365VQ
ICA07	79040397	IC	MM1575ANRE
ICA19	79040044	IC	NJM4580E
ICA24	79089024	Terminal,Optical	TOTX178
ICM01	P000378240	IC	MSP3417G
ICM02	P000395160	IC	PQ05DZ1UJ00H
ICV01	P000391260	IC	MM1568DJBEG
ICV02	P000391260	IC	MM1568DJBEG
ICW01	P000378260	IC	MM1506XNRE
ICW02	P000378260	IC	MM1506XNRE
ICW03	P000378260	IC	MM1506XNRE
ICW04	P000378270	IC	MM1508XNRE
ICW05	P000405020	IC	TC7W53FU
ICW06	P000405020	IC	TC7W53FU
ICX01	79040382	IC	MM1140XFFE
ICX02	79040369	IC	MM1113XFBE
ICX03	P000405080	IC	XC6209
ICX04	P000395150	IC	MM1565AFBE
ICX06	P000377890	IC	MM1501XNRE
		- TRANSISTORS -	
Q700	79050016	Transistor,Chip	2SC2712
Q703	79050018	Transistor,Chip	2SA1162
Q901	79050043	Transistor,Chip	RN1402
Q902	79050001	Transistor,Chip	RN2402
Q903	79050016	Transistor,Chip	2SC2712
Q904	79050014	Transistor,Chip	HN1C03F
Q905	79050018	Transistor,Chip	2SA1162
Q906	79050016	Transistor,Chip	2SC2712
QA01	79050014	Transistor,Chip	HN1C03F
QA02	79050014	Transistor,Chip	HN1C03F
QA03	79050043	Transistor,Chip	RN1402
QA04	79050001	Transistor,Chip	RN2402
QB02	79050018	Transistor,Chip	2SA1162
QB04	79050018	Transistor,Chip	2SA1162
QB21	P000395120	Transistor,Chip	2SC2714-Y
QB22	P000395120	Transistor,Chip	2SC2714-Y
QB60	P000395160	IC	PQ05DZ1UJ00H
QV01	79050018	Transistor,Chip	2SA1162
QV02	79050043	Transistor,Chip	RN1402
QV03	79050043	Transistor,Chip	RN1402
QV04	79050018	Transistor,Chip	2SA1162
QV05	79050043	Transistor,Chip	RN1402
QW01	79050016	Transistor,Chip	2SC2712
QW02	79050043	Transistor,Chip	RN1402
QW03	79050016	Transistor,Chip	2SC2712
QW04	79050016	Transistor,Chip	2SC2712
QW05	79050016	Transistor,Chip	2SC2712

LOCATION NUMBER	PART NUMBER	DESCRIPTION	
QW06	79050001	Transistor,Chip	RN2402
QW07	79050018	Transistor,Chip	2SA1162
QW08	79050016	Transistor,Chip	2SC2712
QW10	79050016	Transistor,Chip	2SC2712
QW11	79050043	Transistor,Chip	RN1402
QX01	79050016	Transistor,Chip	2SC2712
QX02	79050018	Transistor,Chip	2SA1162
QX03	79050018	Transistor,Chip	2SA1162
QX04	79050018	Transistor,Chip	2SA1162
QX05	79050018	Transistor,Chip	2SA1162
QX06	79050018	Transistor,Chip	2SA1162
QX07	79050018	Transistor,Chip	2SA1162
		- DIODES -	
D701	79060019	Diode,Chip	1SS355
D702	79060028	Diode,Chip	1SS226
D704	79060019	Diode,Chip	1SS355
D903	79060019	Diode,Chip	1SS355
D905	79060019	Diode,Chip	1SS355
DA09	79060019	Diode,Chip	1SS355
DB01	79060096	Diode,Zener	MTZJT-7733D
DM01	79060019	Diode,Chip	1SS355
DV01	79060028	Diode,Chip	1SS226
DV02	79060028	Diode,Chip	1SS226
DV03	79060028	Diode,Chip	1SS226
DV04	79060028	Diode,Chip	1SS226
DV05	79060028	Diode,Chip	1SS226
DV06	79060028	Diode,Chip	1SS226
DW01	79060028	Diode,Chip	1SS226
DW02	79060028	Diode,Chip	1SS226
DW03	79060028	Diode,Chip	1SS226
DW04	79060019	Diode,Chip	1SS355
DW05	79060028	Diode,Chip	1SS226
DW06	79060028	Diode,Chip	1SS226
DW07	79060028	Diode,Chip	1SS226
DW08	79060019	Diode,Chip	1SS355
DW09	79060028	Diode,Chip	1SS226
DW10	79060028	Diode,Chip	1SS226
DW11	79060028	Diode,Chip	1SS226
DW12	79060028	Diode,Chip	1SS226
DW13	79060028	Diode,Chip	1SS226
DW14	79060028	Diode,Chip	1SS226
DW15	79060019	Diode,Chip	1SS355
DW16	79060028	Diode,Chip	1SS226
DW17	79060019	Diode,Chip	1SS355
DW19	79060019	Diode,Chip	1SS355
DW20	79060028	Diode,Chip	1SS226
DW21	79060028	Diode,Chip	1SS226
DW22	79060019	Diode,Chip	1SS355
DX01	79060028	Diode,Chip	1SS226
DX02	79060028	Diode,Chip	1SS226
DX03	79060028	Diode,Chip	1SS226
		- MISCELLANEOUS -	
B701	P000377950	Buzzer	PS1240P02AT
J701	P000401140	Jack,3.5 Phone	
JX01	P000395110	Jack Board	
JX02	P000378280	Connector,RGB	21Pin
K901	P000405010	Relay	ATX209
! MB01	P000405090	Tuner	TCPM0601PD15A
X700	P000391040	Crystal	
X701	P000363400	Oscillator,Crystal	
X702	P000395090	Resonator,Ceramic	FCR4.43MC5AT
X703	P000405000	Resonator,Ceramic	CSBLA500KEC8-BO
XM01	P000395100	Resonator,Ceramic	AT-41-18.432M
EU55	P000405180	PC Board Assy	Front Jack
		- MISCELLANEOUS -	
J170	P000387300	Jack,DV	
J171	P000401130	Jack,3Pin	
J172	P000401120	Jack,S-Video	

Specification

RD-XS32SB 1/2

■ Power requirement during operation
41W

■ Power requirement at standby
3.7W (Eco mode: off)
1.9W (Eco mode: on)

■ Power supply
230 - 240V AC, 50/60 Hz

■ Mass
4.7kg

■ External dimension
Width 430 x Height 78 x Depth 325mm

■ Tuner
System: Frequency synthesizer
Channel coverage: PAL I VHF: A-J, 11, 13, E2-E12
UHF: E21-E69
CATV: X, Y, Z, S1-S41, 1-53
(48MHz to 464MHz, 8MHz steps)
Stereo: NICAM-I

■ Antenna input/output terminal
VHF/UHF: 75Ω, IEC Connector

■ Signal system
Standard PAL Colour TV system

■ Laser
Semiconductor laser, Wavelength: 650nm/780nm

■ Format
DVD-VR format
DVD-Video format

■ Image recording system
MPEG2

■ Sound recording system
Dolby Digital M1, M2, Linear PCM

■ VIDEO input
1.0Vp-p (75Ω), Sync signal negative,
Pin jack x 1 system, 1 in front
SCART socket x 2 at rear

■ VIDEO output
1.0Vp-p (75Ω), Sync signal negative,
Pin jack x 1 system, 1 at rear
SCART socket x 2 at rear

■ S-VIDEO input
(Y) 1.0Vp-p (75Ω), Sync signal negative,
(C) 0.286Vp-p (75Ω), 1 in front
Mini DIN4 Pin x 1 system
SCART socket x 1 at rear

■ S-VIDEO output
(Y) 1.0Vp-p (75Ω), Sync signal negative,
(C) 0.286Vp-p (75Ω), 1 at rear
Mini DIN4 Pin x 1 system
SCART socket x 1 at rear

■ COMPONENT output (Y, P_B, P_R)
Y output (green), 1.0Vp-p (75Ω),
Sync signal negative, Pin jack x 1 system
P_B, P_R output (blue, red), 0.7Vp-p (75Ω),
Pin jack x 1 system each

■ RGB input
(R) 0.7Vp-p (75Ω)
(G) 0.7Vp-p (75Ω)
(B) 0.7Vp-p (75Ω)
SCART socket x 1 at rear (AV2 only)

■ RGB output
(R) 0.7Vp-p (75Ω)
(G) 0.7Vp-p (75Ω)
(B) 0.7Vp-p (75Ω)
SCART socket x 1 at rear (AV1 only)

■ AUDIO input
2.0V (rms), 50kΩ or below, pin jack
(L, R) x 1 system
1 in front
SCART socket x 2 at rear

■ AUDIO output
2.0V (rms), 200Ω or above, pin jack
(L, R) x 1 system
1 at rear
SCART socket x 2 at rear

RD-XS32SB 2/2

■ DIGITAL AUDIO OUTPUT BITSTREAM/PCM (OPTICAL terminal)

Optical connector x 1 system

■ DIGITAL AUDIO OUTPUT BITSTREAM/PCM (COAXIAL terminal)

0.5Vp-p (75Ω), pin jack x 1 system

■ CHANNEL CHANGE IR jack

This is for connection of the supplied IR control cable only.

■ DV input

4-pin x 1 in front

■ Remote control

Wireless remote control (SE-R0132)

■ Operating conditions

Temperature: 5°C ~ 35°C,
Position: Horizontal

■ Clock display

24 hour digital display

■ Clock accuracy

Quartz (monthly deviation: approximately ±30 seconds)

■ Supplied Accessories

- Remote control 1
- Batteries (R03) 2
- Power cord 1
- Coaxial cable 1
- Video/Audio cable 1
- IR control cable 1
- OWNER'S MANUAL (INSTALLATION GUIDE) 1
- OWNER'S MANUAL (OPERATIONS) 1
- Quick Reference 1

- The design and specifications may change without prior notice.
- The Illustrations and screens described in this manual may be exaggerated or simplified for easy recognition and may be slightly different from the actual unit.

Specification

RD-XS32SF 1/2

■ Power requirement during operation
41W

■ Power requirement at standby
3.7W (Eco mode: off)
1.9W (Eco mode: on)

■ Power supply
230 - 240V AC, 50/60 Hz

■ Mass
4.7kg

■ External dimension
Width 430 x Height 78 x Depth 325mm

■ Tuner
System: Frequency synthesizer
Channel coverage:

SECAM L	VHF:	FA, FB, FC1, FC, F1-F6
	UHF:	E21-E69
	CATV:	B-Q, H1-H21, 1-18, 70-99
PAL B/G	VHF:	A-H, E2-E12, M4-M10,
SECAM B/G		R1-R12, U1-U15
	UHF:	E21-E69
	CATV:	S1-S41, X, Y, Z, Z+1, Z+2
PAL D/K	VHF:	A-H, E2-E12, M4-M10,
SECAM D/K		R1-R12, U1-U15
	UHF:	E21-E69
	CATV:	S1-S41, X, Y, Z, Z+1, Z+2

■ Antenna input/output terminal
VHF/UHF: 75Ω, IEC Connector

■ Signal system
Standard PAL/SECAM Colour TV system

■ Laser
Semiconductor laser, Wavelength: 650nm/780nm

■ Format
DVD-VR format
DVD-Video format

■ Image recording system
MPEG2

■ Sound recording system
Dolby Digital M1, M2, Linear PCM

■ VIDEO input
1.0Vp-p (75Ω), Sync signal negative,
Pin jack x 1 system, 1 in front
PERITEL socket x 2 at rear

■ VIDEO output
1.0Vp-p (75Ω), Sync signal negative,
Pin jack x 1 system, 1 at rear
PERITEL socket x 2 at rear

■ S-VIDEO input
(Y) 1.0Vp-p (75Ω), Sync signal negative,
(C) 0.286Vp-p (75Ω), 1 in front
Mini DIN4 Pin x 1 system
PERITEL socket x 1 at rear

■ S-VIDEO output
(Y) 1.0Vp-p (75Ω), Sync signal negative,
(C) 0.286Vp-p (75Ω), 1 at rear
Mini DIN4 Pin x 1 system
PERITEL socket x 1 at rear

■ COMPONENT output (Y, P_B, P_R)
Y output (green), 1.0Vp-p (75Ω),
Sync signal negative, Pin jack x 1 system
P_B, P_R output (blue, red), 0.7Vp-p (75Ω),
Pin jack x 1 system each

■ RGB input
(R) 0.7Vp-p (75Ω)
(G) 0.7Vp-p (75Ω)
(B) 0.7Vp-p (75Ω)
PERITEL socket x 1 at rear (AV2 only)

■ RGB output
(R) 0.7Vp-p (75Ω)
(G) 0.7Vp-p (75Ω)
(B) 0.7Vp-p (75Ω)
PERITEL socket x 1 at rear (AV1 only)

■ AUDIO input
2.0V (rms), 50kΩ or below, pin jack
(L, R) x 1 system
1 in front
PERITEL socket x 2 at rear

■ AUDIO output
2.0V (rms), 200Ω or above, pin jack
(L, R) x 1 system
1 at rear
PERITEL socket x 2 at rear

RD-XS32SF 2/2

■ DIGITAL AUDIO OUTPUT BITSTREAM/PCM (OPTICAL terminal)

Optical connector x 1 system

■ DIGITAL AUDIO OUTPUT BITSTREAM/PCM (COAXIAL terminal)

0.5Vp-p (75Ω), pin jack x 1 system

■ CHANNEL CHANGE IR jack

This is for connection of the supplied IR control cable only.

■ DV input

4-pin x 1 in front

■ Remote control

Wireless remote control (SE-R0133)

■ Operating conditions

Temperature: 5°C ~ 35°C,
Position: Horizontal

■ Clock display

24 hour digital display

■ Clock accuracy

Quartz (monthly deviation: approximately ±30 seconds)

■ Supplied Accessories

- Remote control 1
- Batteries (R03) 2
- Power cord 1
- Coaxial cable 1
- Video/Audio cable 1
- IR control cable 1
- OWNER'S MANUAL (INSTALLATION GUIDE) 1
- OWNER'S MANUAL (OPERATIONS) 1

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Specification

RD-XS32SG 1/2

■ Power requirement during operation
41W

■ Power requirement at standby
3.7W (Eco mode: off)
1.9W (Eco mode: on)

■ Power supply
230 - 240V AC, 50/60 Hz

■ Mass
4.7kg

■ External dimension
Width 430 x Height 78 x Depth 325mm

■ Tuner
System: Frequency synthesizer
Channel coverage:

PAL B/G	VHF:	A-H, E2-E12, M4-M10,
SECAM B/G		R1-R12, U1-U5, 0-12, 5A, 9A
	UHF:	E21-E69, 28-69
	CATV:	S1-S41, X, Y, Z, Z+1, Z+2
PAL D/K	VHF:	A-H, E2-E12, M4-M10,
SECAM D/K		R1-R12, U1-U15
	UHF:	E21-E69
	CATV:	S1-S41, X, Y, Z, Z+1, Z+2
SECAM L	VHF:	FB, FC1, FC, F1-F6
	UHF:	E21-E69
	CATV:	B-Q, H1-H21, 1-18, 70-99

■ Antenna input/output terminal
VHF/UHF: 75Ω, IEC Connector

■ Signal system
Standard PAL/SECAM Colour TV system

■ Laser
Semiconductor laser, Wavelength: 650nm/780nm

■ Format
DVD-VR format
DVD-Video format

■ Image recording system
MPEG2

■ Sound recording system
Dolby Digital M1, M2, Linear PCM

■ VIDEO input
1.0Vp-p (75Ω), Sync signal negative,
Pin jack x 1 system, 1 in front
SCART socket x 2 at rear

■ VIDEO output
1.0Vp-p (75Ω), Sync signal negative,
Pin jack x 1 system, 1 at rear
SCART socket x 2 at rear

■ S-VIDEO input
(Y) 1.0Vp-p (75Ω), Sync signal negative,
(C) 0.286Vp-p (75Ω), 1 in front
Mini DIN4 Pin x 1 system
SCART socket x 1 at rear (AV2 only)

■ S-VIDEO output
(Y) 1.0Vp-p (75Ω), Sync signal negative,
(C) 0.286Vp-p (75Ω), 1 at rear
Mini DIN4 Pin x 1 system
SCART socket x 1 at rear (AV1 only)

■ COMPONENT output (Y, P_B, P_R)
Y output (green), 1.0Vp-p (75Ω),
Sync signal negative, Pin jack x 1 system

P_B, P_R output (blue, red), 0.7Vp-p (75Ω),
Pin jack x 1 system each

■ RGB input
(R) 0.7Vp-p (75Ω)
(G) 0.7Vp-p (75Ω)
(B) 0.7Vp-p (75Ω)
SCART socket x 1 at rear (AV2 only)

■ RGB output
(R) 0.7Vp-p (75Ω)
(G) 0.7Vp-p (75Ω)
(B) 0.7Vp-p (75Ω)
SCART socket x 1 at rear (AV1 only)

■ AUDIO input
2.0V (rms), 50kΩ or below, pin jack
(L, R) x 1 system
1 in front
SCART socket x 2 at rear

■ AUDIO output
2.0V (rms), 200Ω or above, pin jack
(L, R) x 1 system
1 at rear
SCART socket x 2 at rear

RD-XS32SG 2/2

■ DIGITAL AUDIO OUTPUT BITSTREAM/PCM (OPTICAL terminal)

Optical connector x 1 system

■ DIGITAL AUDIO OUTPUT BITSTREAM/PCM (COAXIAL terminal)

0.5Vp-p (75Ω), pin jack x 1 system

■ CHANNEL CHANGE IR jack

This is for connection of the supplied IR control cable only.

■ DV input

4-pin x 1 in front

■ Remote control

Wireless remote control (SE-R0133)

■ Operating conditions

Temperature: 5°C ~ 35°C,
Position: Horizontal

■ Clock display

24 hour digital display

■ Clock accuracy

Quartz (monthly deviation: approximately ±30 seconds)

■ Supplied Accessories

- Remote control 1
- Batteries (R03) 2
- Power cord 1
- Coaxial cable 1
- Video/Audio cable 1
- IR control cable 1
- OWNER'S MANUAL (INSTALLATION GUIDE) 1
- OWNER'S MANUAL (OPERATIONS) 1

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